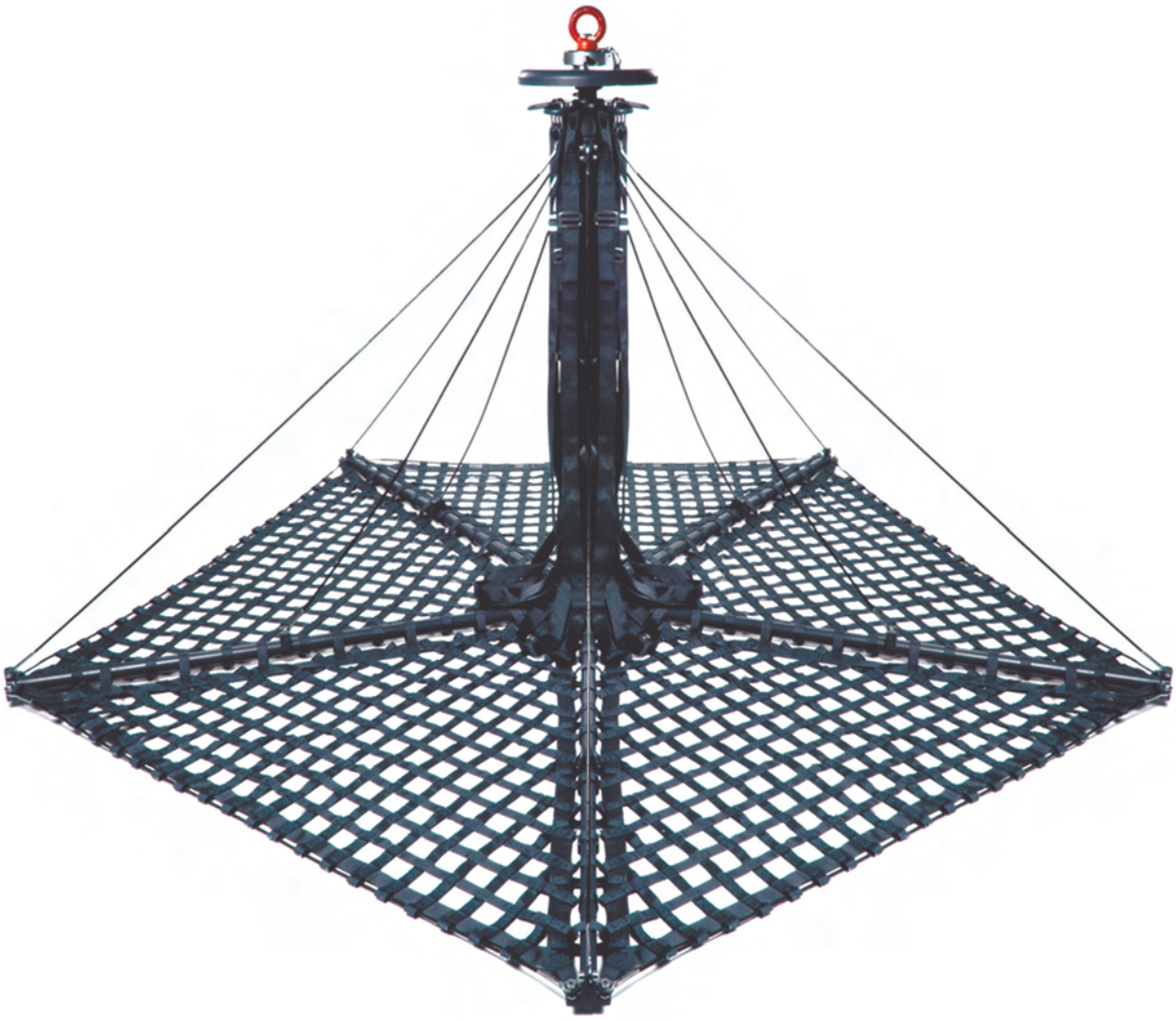
AirTEP

Information Manual



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AERIAL
AVIATION • SAFETY • TACTICAL

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AirTEP

Special Forces Platform

PRODUCT DESCRIPTION

The Airborne Tactical Extraction Platform is specially designed for Special Forces.
Planned in black the AirTEP is composed of:

1	Platform
5	Nets *
1	Rope *
10	Long Safety Belts *
1	Souding Line *
1	Mast Strap *
1	Protection Shoe *(Innovation 2008)*
1	Hardcase *(Innovation 2008)*
1	Rope bag
1	Platform Bag
1	Braking Device
1	Shackle 14500
1	Ratchet Folding Strap
3	Velcro Strap

** Black Aramid fiber (Innovation 2008)*

Optional

Device for centerwise dropping

1	Guiding Ring	

1	BK 10-10 Hook	

NATO CODIFICATION SYSTEM (NCS)

NCAGE	FAT21
Nat.Ident No	485224158
Items of supply NIIN/NSN	1670145547611
Industrial references	7N03775

CERTIFICATE OF AIRWORTHINESS

Escape International certifies that the Airborne Platform, **Serial number**

- ❒ Conforms to its type design
- ❒ Is in a condition for safe flight
- ❒ Meets the requirements applicable to its specifications, defined by the :

  - Acte technique DGA N° 333-04/SPAé/ST/CEA
  - Acte technique DGA N° 196-05/SPAé/CEA
  - Acte technique DGA N° 061-06/CEP/ASA/PFA

OPERATING LIMITS

- Max loading capacity: 1500kg with a max of 300 kg per net
- Standard loading is 10 people
  5 additional persons can come on board if they are preequipped with safety harness fitted with a hooking device, within the limit of 1 500 kg
- Max wind: 30 Kts Omni directional
- Max vertical speed on take off: 2.5 hm/min
- Max transit speed

		LOAD			
AIRBORNE PLATFORM CONFIGURATION	Folded position	0 to 69 kg	70 to 259 kg	260 to 629 kg	630 to 1 500 kg
MAX INDICATED SPEED	90 km/h	80 km/h	140 km/h	180 km/h	

WARRANTY CERTIFICATE

Escape International warrants that the Airborne platform, **Serial number** meets the Specifications

1 – SPECIFICATIONS

❒ Dimensions

Folded: height, 1.50 m; diameter, 0.40 m

Opened: height 1.50 m; diameter, 2,90 m or 7 m^2

❒ Net weight

52 kg

❒ Temperature limits

-30° C to +50° C

❒ Hygrometry

0 % to 100 %

❒ Operating limits

- Max loading capacity: 1500kg with a max of 300 kg per net
- Standard loading is 10 people.
  5 additional persons can come on board if they are preequipped with safety harness fitted with a hooking device, within the limit of 1 500 kg.
- Max wind: 30 Kts Omni directional
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2 – MAINTENANCE PROTOCOL

The maintenance of the Airborne Platform are made at three levels.

- ❒ End user level
- ❒ Maintenance unit level
- ❒ Manufacturer level

❒ At the end user level,

the maintenance is defined in the maintenance manual by the monthly check-list and the check-list before usage.

At this level, it is only about visual and manual checks and storage conditions to respect. Any other maintenance operation has to be excluded from this level.

❒ At the maintenance unit level

The maintenance operations at this level are more complicated and required to be executed by the unit staff, trained by Escape International or the distributor, and with proper tooling.

These operations are:

- arm replacement
- ratchet replacement
- cable replacement
- net replacement
- main lifting ring

The replacement of these components can ONLY be made using spare parts supplied by Escape International.

The spare parts are NOT INTERCHANGEABLE.

Any maintenance operation, using non Escape spare parts, has for consequences to loose the flight qualification of the platform.

The same rule applies to the accessories.

❒ At the manufacturer level

- **AFTER 1 000 CYCLES OR 5 YEARS**, the platform should be return to the manufacturer for general inspection.

The operations for general inspection are described pages 29-30 of the maintenance manual.

Using the platform beyond this limit, without having the general inspection made, leads to the lost of the flight certification of the platform and disengage the responsibility of Escape International.

- **AFTER 2 000 OR 10 YEARS**, the platform should be return to the manufacturer for general inspection.

The operations for general inspection are described pages 29-30 of the maintenance manual.

Using the platform beyond this limit, without having the general inspection made, leads to the lost of the flight certification of the platform and disengage the responsibility of Escape International.

- **AFTER 3 000 CYCLES OR 15 YEARS**, a general overhaul of the platform could planed at the manufacturer premises, in regard of the shape of the platform.

The cost will be estimated prior to this overhaul.

Note: 1 cycle = 1 load + 1 take off + 1 flight + 1 landing

3 - GUARANTEE

The platform is guaranteed for one year.

This guarantee is valid for the flight specifications and under the condition that the platform is maintained in accordance with the maintenance manual and this maintenance protocol.

The defective parts or accessories will be shipped by Escape International.

After one year, the parts and accessories will be at the Customer charges.

QUALIFICATION SEA KING S-61

Danish Special Operation Force

Qualified	**Rescue Platform type A**, Serial numbers 7N031775-/ Serial numbers 7N038354-/ (Fireproof)
Implementation on	**SEA King S-61**
Following	❒ Mechanical resistance testing performed by **CEAT** (Centre d'expertise aéronautique de Toulouse) according to GAM-EG 13 and FAR 25 procedures ❒ Inflight resistance and performance testing performed by **CEV** (Centre d'essais en vol)

On year 2006

OPERATING LIMITS

- Max loading capacity:
  1500 kg with a max of 300 kg per net
- Standard loading is 10 people
  7 additional persons can come on board if they are equipped with safety harness fitted with a hooking device, within the limit of 1 500 kg.
  This exceptional loading is limited to 50 cycles
- Max wind:
  30 Kts Omni directional
- Max vertical speed on take off:
  2.5 hm/min
- Max vertical speed on landing:
  - Loaded: - 0,30 hm/min
  - Unloaded: -1,5 hm/min

INFLIGHT SPECIFICATIONS

		LOAD			
RESCUE PLATFORM CONFIGURATION	Folded position	0 to 70 kg	71 to 259 kg	260 to 404 kg	405 to 1 500 kg
MAX INDICATED SPEED (MIS)	40 kts 75 km/h	40 kts 75 km/h	60 kts 110 km/h	95 kts 175 km/h	
RATE OF LIFTING AT MIS	No limitation				
RATE OF DESCENT AT MIS OUT OF THE LANDING PHASE	450 fpm -1,4 hm/min	450 fpm -1,4 hm/min	300 fpm -1 hm/min	1000 fpm -3 hm/min	1800 fpm -5,5 hm/min
MAXIMUM BASKET INCLINATION AT MIS	30°				
MAXIMUM BANK ANGLE	30°				
INDICATED SPEED WHEN MOVING TO THE LEFT, RIGHT AND REAR	30 kts (55 km/h) / aircraft limitation, whichever lowest				
ACCELERATION STOP	Maximum speed of 30 kts (55 km/h) then stop				
ENGINE FAILURE	Diving at 15° up to 30 kts (55km/h) then pull up				

ENVIRONMENTAL UTILISATION

- Night and day use
- Land use
- Aquatic use

QUALIFICATION SUPER FRELON

DGA (Délégation Générale de l'Armement)
French Ministry of Defence / Aeronautical program services

Qualified	**Rescue Platform type A**, Serial numbers 7N031775-/ Serial numbers 7N038354-/ (Fireproof)
Implementation on	**SUPER FRELON**
Through	Technical act DGA N° 057-06/CEP/ASA/PFA
Following	❒ Mechanical resistance testing performed by **CEAT** (Centre d'Expertise Aéronautique de Toulouse) according to GAM-EG 13 and FAR 25 procedures ❒ In-flight resistance and performance testing performed by **CEV** (Centre d'Essais en Vol)

The 2nd of February 2006

OPERATING LIMITS

- Max loading capacity:
  1500 kg with a max of 300 kg per net
- Standard loading is 10 people
  7 additional persons can come on board if they are equipped with safety harness fitted with a hooking device, within the limit of 1 500 kg.
  This exceptional loading is limited to 50 cycles
- Max wind:
  30 Kts Omni directional
- Max vertical speed on take off:
  2.5 hm/min
- Max vertical speed on landing:
  - Loaded: - 0,30 hm/min
  - Unloaded: -1,5 hm/min

INFLIGHT SPECIFICATIONS

		LOAD			
RESCUE PLATFORM CONFIGURATION	Folded position	Empty	50 to 239 kg	240 to 629 kg	630 to 1 500 kg
MAX INDICATED SPEED (MIS)	80 km/h		120km/h	220 km/h	
RATE OF LIFTING AT MIS	No limitation				
RATE OF DESCENT AT MIS OUT OF THE LANDING PHASE	-1,5 hm/min	-1,5 hm/min	-1 hm/min	-3,5 hm/min	-5 hm/min
MAXIMUM INCLINATION AT MIS	30°				
INDICATED SPEED WHEN MOVING TO THE LEFT, RIGHT AND REAR	55 km/h				
ACCELERATION STOP	Maximum speed of 70 km/h then stop				
ENGINE FAILURE	Diving at 15° up to 60km/h then pull up				

ENVIRONMENTAL UTILISATION

- Land use:
  Night and Day
- Aquatic use:
  Day only
- NO QUALIFICATION FOR NIGHT AQUATIC USE

QUALIFICATION UH-60/S70-A BLACK HAWK

ESCAPE INTERNATIONAL,
according to the qualification process of
DGA (Délégation Générale de l'Armement)
French Ministry of Defence / Aeronautical program services

Qualified	**Rescue Platform type A**, Serial numbers 7N031775-/ Serial numbers 7N038354-/ (Fireproof)
Implementation on	**UH-60/S70-A**
Through	❒ Technical act DGA N° 333-04/SPAé/ST/CEA (27/09/2004) ❒ Technical act DGA N° 196-05/SPAé/CEA (01/06/2005)
Following	❒ Mechanical resistance testing performed by **CEAT** (Centre d'Expertise Aéronautique de Toulouse) according to GAM-EG 13 and FAR 25 procedures ❒ In-flight resistance and performance testing performed by **CEV** (Centre d'Essais en Vol)

The 10th of June 2007

OPERATING LIMITS

- Max loading capacity:
  1500 kg with a max of 300 kg per net
- Standard loading is 10 people
  7 additional persons can come on board if they are equipped with safety harness fitted with a hooking device, within the limit of 1 500 kg.
  This exceptional loading is limited to 50 cycles
- Max wind:
  30 Kts Omni directional
- Max vertical speed on take off:
  2.5 hm/min
- Max vertical speed on landing:
  - Loaded: - 0,30 hm/min
  - Unloaded: -1,5 hm/min

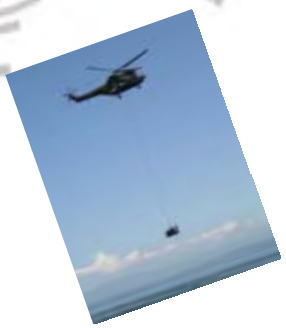
INFLIGHT SPECIFICATIONS

		LOAD			
RESCUE PLATFORM CONFIGURATION	Folded position	0 to 69 kg	70 to 259 kg	260 to 629 kg	630 to 1 500 kg
MAX INDICATED SPEED (MIS)	90 km/h	80 km/h	140 km/h	180 km/h	
RATE OF LIFTING AT MIS	No limitation				
RATE OF DESCENT AT MIS OUT OF THE LANDING PHASE	-1,5 hm/min	-1,5 hm/min	-1 hm/min	-3,5 hm/min	-5 hm/min
MAXIMUM INCLINATION AT MIS	30°				
INDICATED SPEED WHEN MOVING TO THE LEFT, RIGHT AND REAR	55 km/h				
ACCELERATION STOP	Maximum speed of 70 km/h then stop				
ENGINE FAILURE	Diving at 15° up to 60km/h then pull up				

ENVIRONMENTAL UTILISATION

- Night and day use
- Land use
- Aquatic use

QUALIFICATION
PUMA SA 330



DGA (Délégation Générale de l'Armement)
French Ministry of Defence / Aeronautical program services

Qualified	**Rescue Platform type A**, Serial numbers 7N031775-/ Serial numbers 7N038354-/ (Fireproof)
Implementation on	**PUMA SA 330**
Through	❒ Technical act DGA N° 333-04/SPAé/ST/CEA (27/09/2004) ❒ Technical act DGA N° 196-05/SPAé/CEA (01/06/2005)
Following	❒ Mechanical resistance testing performed by **CEAT** (Centre d'Expertise Aéronautique de Toulouse) according to GAM-EG 13 and FAR 25 procedures ❒ In-flight resistance and performance testing performed by **CEV** (Centre d'Essais en Vol)

The 1st of June 2005

OPERATING LIMITS

- Max loading capacity:
  1500 kg with a max of 300 kg per net
- Standard loading is 10 people
  7 additional persons can come on board if they are equipped with safety harness fitted with a hooking device, within the limit of 1 500 kg.
  This exceptional loading is limited to 50 cycles
- Max wind:
  30 Kts Omni directional
- Max vertical speed on take off:
  2.5 hm/min
- Max vertical speed on landing:
  - Loaded: - 0,30 hm/min
  - Unloaded: -1,5 hm/min

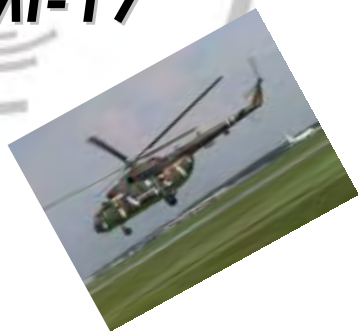
INFLIGHT SPECIFICATIONS

		LOAD			
RESCUE PLATFORM CONFIGURATION	Folded position	0 to 69 kg	70 to 259 kg	260 to 629 kg	630 to 1 500 kg
MAX INDICATED SPEED (MIS)	90 km/h	80 km/h	140 km/h	180 km/h	
RATE OF LIFTING AT MIS	No limitation				
RATE OF DESCENT AT MIS OUT OF THE LANDING PHASE	-1,5 hm/min	-1,5 hm/min	-1 hm/min	-3,5 hm/min	-5 hm/min
MAXIMUM INCLINATION AT MIS	30°				
INDICATED SPEED WHEN MOVING TO THE LEFT, RIGHT AND REAR	55 km/h				
ACCELERATION STOP	Maximum speed of 70 km/h then stop				
ENGINE FAILURE	Diving at 15° up to 60km/h then pull up				

ENVIRONMENTAL UTILISATION

- Night and day use
- Land use
- Aquatic use

QUALIFICATION
MIL Mi-17



Czech Republic Special Operation Force

Qualified	**Rescue Platform type A**, Serial numbers 7N031775-/ Serial numbers 7N038354-/ (Fireproof)
Implementation on	**MIL Mi-17**
Following	❒ Mechanical resistance testing performed by **CEAT** (Centre d'expertise aéronautique de Toulouse) according to GAM-EG 13 and FAR 25 procedures ❒ Inflight resistance and performance testing performed by **CEV** (Centre d'essais en vol)

On year 2006

OPERATING LIMITS

- Max loading capacity:
  1500 kg with a max of 300 kg per net
- Standard loading is 10 people
  7 additional persons can come on board if they are equipped with safety harness fitted with a hooking device, within the limit of 1 500 kg.
  This exceptional loading is limited to 50 cycles
- Max wind:
  30 Kts Omni directional
- Max vertical speed on take off:
  2.5 hm/min
- Max vertical speed on landing:
  - Loaded: - 0,30 hm/min
  - Unloaded: -1,5 hm/min

INFLIGHT SPECIFICATIONS

		LOAD			
RESCUE PLATFORM CONFIGURATION	Folded position	0 to 70 kg	71 to 259 kg	260 to 404 kg	405 to 1 500 kg
MAX INDICATED SPEED (MIS)	40 kts 75 km/h	40 kts 75 km/h	60 kts 110 km/h	95 kts 175 km/h	
RATE OF LIFTING AT MIS	No limitation				
RATE OF DESCENT AT MIS OUT OF THE LANDING PHASE	450 fpm -1,4 hm/min	450 fpm -1,4 hm/min	300 fpm -1 hm/min	1000 fpm -3 hm/min	1800 fpm -5,5 hm/min
MAXIMUM BASKET INCLINATION AT MIS	30°				
MAXIMUM BANK ANGLE	30°				
INDICATED SPEED WHEN MOVING TO THE LEFT, RIGHT AND REAR	30 kts (55 km/h) / aircraft limitation, whichever lowest				
ACCELERATION STOP	Maximum speed of 30 kts (55 km/h) then stop				
ENGINE FAILURE	Diving at 15° up to 30 kts (55km/h) then pull up				

ENVIRONMENTAL UTILISATION

- Night and day use
- Land use
- Aquatic use

QUALIFICATION
EH 101

Danish Special Operation Force

Qualified	**Rescue Platform type A**, Serial numbers 7N031775-/ Serial numbers 7N038354-/ (Fireproof)
Implementation on	**EH 101**
Following	❒ Mechanical resistance testing performed by **CEAT** (Centre d'expertise aéronautique de Toulouse) according to GAM-EG 13 and FAR 25 procedures ❒ Inflight resistance and performance testing performed by **CEV** (Centre d'essais en vol)

On year 2006

OPERATING LIMITS

- Max loading capacity:
  1500 kg with a max of 300 kg per net
- Standard loading is 10 people
  7 additional persons can come on board if they are equipped with safety harness fitted with a hooking device, within the limit of 1 500 kg.
  This exceptional loading is limited to 50 cycles
- Max wind:
  30 Kts Omni directional
- Max vertical speed on take off:
  2.5 hm/min
- Max vertical speed on landing:
  - Loaded: - 0,30 hm/min
  - Unloaded: -1,5 hm/min

INFLIGHT SPECIFICATIONS

		LOAD			
RESCUE PLATFORM CONFIGURATION	Folded position	0 to 70 kg	71 to 259 kg	260 to 404 kg	405 to 1 500 kg
MAX INDICATED SPEED (MIS)	40 kts 75 km/h	40 kts 75 km/h	60 kts 110 km/h	95 kts 175 km/h	
RATE OF LIFTING AT MIS	No limitation				
RATE OF DESCENT AT MIS OUT OF THE LANDING PHASE	450 fpm -1,4 hm/min	450 fpm -1,4 hm/min	300 fpm -1 hm/min	1000 fpm -3 hm/min	1800 fpm -5,5 hm/min
MAXIMUM BASKET INCLINATION AT MIS	30°				
MAXIMUM BANK ANGLE	30°				
INDICATED SPEED WHEN MOVING TO THE LEFT, RIGHT AND REAR	30 kts (55 km/h) / aircraft limitation, whichever lowest				
ACCELERATION STOP	Maximum speed of 30 kts (55 km/h) then stop				
ENGINE FAILURE	Diving at 15° up to 30 kts (55km/h) then pull up				

ENVIRONMENTAL UTILISATION

- Night and day use
- Land use
- Aquatic use

QUALIFICATION
EC 725

DGA (Délégation Générale de l'Armement)
French Ministry of Defence / Aeronautical program services

Qualified	**Rescue Platform type A**, Serial numbers 7N031775-/ Serial numbers 7N038354-/ (Fireproof)
Implementation on	**EC 725 HUS**
Through	Technical act DGA N° 061-06/CEP/ASA/PFA
Following	❒ Mechanical resistance testing performed by **CEAT** (Centre d'Expertise Aéronautique de Toulouse) according to GAM-EG 13 and FAR 25 procedures ❒ In-flight resistance and performance testing performed by **CEV** (Centre d'Essais en Vol)

The 10th of February 2006

OPERATING LIMITS

- Max loading capacity:
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INFLIGHT SPECIFICATIONS

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MAX INDICATED SPEED (MIS)	90 km/h	80 km/h	140 km/h	180 km/h	
RATE OF LIFTING AT MIS	No limitation				
RATE OF DESCENT AT MIS OUT OF THE LANDING PHASE	-1,5 hm/min	-1,5 hm/min	-1 hm/min	-3,5 hm/min	-5 hm/min
MAXIMUM INCLINATION AT MIS	30°				
INDICATED SPEED WHEN MOVING TO THE LEFT, RIGHT AND REAR	55 km/h				
ACCELERATION STOP	Maximum speed of 70 km/h then stop				
ENGINE FAILURE	Diving at 15° up to 60km/h then pull up				

ENVIRONMENTAL UTILISATION

- Night and day use
- Land use
- Aquatic use

DEMONSTRATION

Introduction

This plan can be followed as a complete demonstration.
Obviously, available time given by clients shall lead the priority issues to deal with.

Demonstration is divided in two main points: theoretical presentation and practical demonstration.

The theoretical part is supported by two power point presentations:

- a short overall presentation,
- a detailed presentation of the platform parts

The practical demonstration is divided in two parts :

- on-ground demonstration, intending to make the platform more familiar to the interested users.
- in-flight demonstration. Several steps during in-flight runs allow a soft and complete practice, giving the pilot opportunities to appreciate helicopter comportment with different loaded platform. It is as well a convenient time to get back to the in-flight specifications.

A briefing is welcome at the end of each part.

This plan is only a proposal, as a guide line for working with similar methods.
Live demonstrations are supposed to teach us improvements on how to perform better runs.

The last document is meant to share our experiences in order to improve our method.
Feel free to propose any improvements, any comments.

I. Overall presentation

Confer ***Overall presentation***

II. Presentation of platform parts

Confer ***Parts presentation***

III. On-ground demonstration

a. Platform features

Practical presentation of the selector and the locking head:

- demonstration on how to open and close the platform
- how automatic and manual modes are selected.

Demonstration on how to secure people on board:

- use of safety belts
- passengers position during flight phases

b. Installation of the platform inside helicopter

Fit in the platform for a central or a lateral use as described in the user manual.

For central use

- Guiding ring must be fitted and properly centered before flight. Insist on it during this phase.
- Hang the BK hook on the central gear box

For both central and lateral use, propose a training on how to fit the braking device, and how to place the rope in it.

Simulation of automatic and manual opening: propose a training on how to handle the breaking device.

c. Crew and pilot communication

Set up of operating procedures with the crews
The crew member who handles the braking device is called the driver.

Central use

1- Pilot info : « **H- 5 mn** »
Place the platform on the trap door.
Driver answer : "**Platform ready and locked".**

2- Pilot info : « **H- 30 s** »
The driver unlocked the head of the platform.
Driver answer: « **Platform unlocked** »

3- After the visual lost of the Platform by the pilot, the driver is alone to inform the pilot where and when he must land the Platform.
The pilot stabilize the helicopter vertically above the recuperation area at 100 feet.

4- Stationary flight : Pilot info : Authorization for dropping

5- The driver push the driving arm :
- Coming down of the Platform.
- At 5/6 meters of the end of the rope, the driver release quickly the driving arm.
- Opening of the Platform
- Driver info : **Platform is opened**

6- The driver guides the pilot to land the Platform on the floor.
- Driver info : Platform landed.

7- The driver pulls out the axe of the driving system to open it and pull out the rope.

8- Fit out the central ring to protect the rope during the flight.

9-
- Place the rope inside the central ring.
- Hang the 4th strap on rep n°7
- Stretch the 4 straps.
- Driver info to the pilot : Braking device free and central ring stretched.

10- The leader of the Platform takes care to the people. The rope is free and the leader keep it with his hand stand up.

11- The leader confirms: ready to take off.

12- Driver info to the pilot : People inside and secured ready to take off.

13- Take off vertically with respect of the flight limitation.

14- The driver controls visually the central ring.

Lateral use

15- Pilot info : « **H- 5 mn** »
The driver open the door and fix the braking handle on the winch hook outside
The driver place the rope into the braking device and hoist the platform outside
Driver answer : "**Platform ready and locked".**

16- Pilot info : « **H- 30 s** »
The driver unlocked the head of the platform.
Driver answer: « **Platform unlocked** »

17- After pilot has lost visual on the platform , the driver guides the pilot to where and when he must land the Platform.
The pilot stabilizes the helicopter vertically above the recuperation area at 100 feet.

18- Hovering flight. Pilot info : **"Authorization for dropping"**

19- The driver push the braking handle:
- Coming down of the Platform.
- Very quickly after the platform dropping, the driver releases quickly the braking handle.
- Opening of the Platform
- Driver info : **"Platform is opened "**

20- The driver guides the pilot to land the Platform on the ground.
- Driver info : **"Platform landed"**.

21- The driver pulls out the axe of the braking device, open it and pull out the rope.

22- Driver info to the pilot : **"Braking device free"**.

23- The leader confirms: **"ready to take off"**.

24- Driver info to the pilot : **"People inside and secured ready to take off"**.

25- Take off vertically in respect of the flight limitation.

IV. Inflight demonstration

In-flight runs intend to present platform utilization to two kinds of users.

- Platform operators onboard the helicopter.
- Pilots for in-flight specifications.

It can be more efficient to separate demonstration so that each kind of public are specifically concerned.

First, a demonstration without load can be done.
Then weight simulations can be performed.
Finally a passenger transport according to decided scenario.

a. Platform dropping

Two flights (one in automatic mode, the other in manual mode) can be proposed without carrying weight.

It allows to set up communication procedures between driver and pilot.
It gives a particular training to the driver regarding the braking device handling.
It gives a particular focus on the two opening modes.

Before going on with weight simulation, formal briefing can conclude this part.
This briefing can take place in a discussion during the weight installation.

b. Weight simulations

Get dummies or sand bag, rope, hooks… to fasten the load on the platform.
Get them ready to gradually load the platform.

Pilot, crew and driver should be trained to automatic mode and braking device handling. This is supposed to be achieved in the previous flights.

Try to propose different steps according to the available material:

- An approximate load of 500 kg (1100 lbs)
- An approximate load of1000kg (2200 lbs)
- *A maximum load of 1500 kg loaded (3300 lbs)*

It allows pilot to be used to in-flight specifications

Weight simulation can be done as following:

First flight (500 kg/ 1100lbs)	Drop the platform (automatic or manual mode)	Helicopter landed, platform loaded. Rope loops hooked. Ready to take off. Take off and hover vertically to the platform.
	Land the platform	
	Land the helicopter (Or hovering)	
	Load the dummies (500 kg / 1100lbs)	
	Remove the braking device	
	Vertical take off	
	Flight with the loaded platform	
	Land the loaded platform	
	Land the helicopter (Or hovering)	
Second (last) flight (1000 kg / 2200lbs)	Load more dummies (1000kg / 2200 lbs)	
	Vertical take off	
	Flight with the loaded platform	
	Land the platform	
	Land the helicopter	
End of the weight simulation	Remove the rope from the shackle	
	Close and fit the platform back inside the helicopter	
	Wind the rope without any knots	
	Fit the braking device	
	Fit the rope to proceed the next flight	

c. Personnel transport

A scenario should be defined to proceed this last demonstration.
It will be decided here the opening mode, the leader of the passengers onboard platform.
The leader can be either in the helicopter or on the ground.

According to this decision, he shall rappel from the helicopter to the ground by a rappel rope. (It's better not to use the platform rope, but a rope fixed to the hoist bracket).
Another man may rappel to cover the first one (scenario of emergency rescue).

If the leader is on the ground, he has nothing to do but lead.

Among passengers onboard the platform (3 to 10), the leader should take care to the others. Each passenger must be secured with the safety belt and the rope must be free (nobody must be seated on or have it around its leg).

The leader is responsible of the communication with the driver inside the helicopter. He has to communicate with him with his own device, gesture or with the red flag included on the platform set of accessories.

Three flights can be undertook with

- 3 passengers
- 7 passengers
- 10 passengers

V. Conclusion. Comments. Final Briefing

Demonstration ends with a final briefing.

VI. Example of demonstration planning

	Morning	Afternoon
Day 1	**Theoretical** Overall presentation Platform parts presentation	**Practical. On ground** Installation of the platform inside the helicopter
	Practical. On ground Platform features	**Practical. On ground** Crew and pilot communication
	Briefing	*Briefing*
Day 2	**Practical. In-flight** Platform dropping	Choice of a scenario
	Practical. In-flight Weight simulation	**Practical. In-flight** Passenger transport
	Briefing	Final Briefing
Day 3	Unpredicted delay or rehearsal of chosen exercises	Unpredicted delay or rehearsal of chosen exercises

VII. Internal documents: improvements on demonstration

Demonstrations themselves shall improve demonstrations.
Let improvements be beneficial to all of us.

An internal communication sheet intends to make our presentation as best as possible all along the coming demonstration.

Confer ***Demonstration driving sheet***

Demonstration driving sheet

Name	Company	Client	Date

Parts	Your comments	Client comments
Presentation		
Suggested improvements		

Parts	Your comments	Client comments
On-ground demonstration		
Suggested improvements		

Parts	Your comments	Client comments
Weight simulation		
Suggested improvements		

Parts	Your comments	Client comments
Passenger transport		
Suggested improvements		

General comments

Training
Lateral use

Introduction

Training aims at giving a guide line for future users to allow them to set up their own protocol.

Training is provided for two kinds of users:

- On-ground operators, responsible of maintenance.
- Operational users.

This training program is therefore divided in two parts: maintenance training and users training.

Each part is divided itself into a theoretical presentation and a practical session.

The last document is meant to share our experiences in order to improve our method.
Feel free to propose any improvements, any comments.

I. Presentations

a. Overall presentation

Confer ***Overall presentation***

b. Presentation of platform parts

Confer ***Parts presentation***

c. Maintenance presentation

Confer ***Maintenance presentation***

II. Maintenance training

Three levels of maintenance are to be presented.
Level one and two are of users responsibility.

Level three is a complete maintenance to be done by Escape International. Platform must be returned to manufacturer for general inspection every 5 years or 1000 cycles.
We will present what is done in this general inspection.

a. Level 1: visual checking

The first level of maintenance is made of simple recurrent visual checking.
It can be done before or after each use or once a month.

Make the visual checking as described in the maintenance manual (monthly check list):

- Rope
- Safety belts
- Platform nets
- Braking device
- Platform structure
  - Insist on the fact that any intervention on the locking system needs a return to manufacturer factory.
- Shackle

Maintenance manual pp.3-4 gives a detailed description of the points to be checked.

To help you in this matter, and to keep a memory of actions taken, confer **monthly check list.**

Maintenance training. LEVEL 1
▪ **Visually checking of the platform with the monthly check list document**

MONTHLY CHECK LIST

Date		Maintenance operator	

Maintenance operation		Checked	Comment (to be changed…)	Action (replacement…)
Rope	Cleanliness (fraying, shrinks, cuts)			
	Knot			
	Drying			
	Loops shields			
Safety Belts	Cleanliness			
	Rings and carbiner			
	Knot			
	Drying			
Platform nets	Damaged seam			
	Cleanliness			
	Drying			
Braking device	Grooves			
	Fixed pulley play			
	Cam pulley play			
	Rope rubbing zones			
Platform structure	Opening, unlocking of the arms			
	Rotation of the wheel, translation of the plate			
	Blocking of the fasteners			
	Impact on arms, head and mast			
	Arms rotation play			
	Spring			
	Ratchet			
	Cables start rupture			
	Eyelets deformation			
Shackle	Deformation			
	Security pin			
Sling safety strap	Cleanliness			
	Hook			
	Drying			

b. Level 2: operators actions

Maintenance operators must be able to replace:

- Arms
- Ratchet or ratchet spring
- Cables: long one, short one and peripheral one
- Nets
- Mast strap
- Main lifting ring

According to the level 1, operators should decide to replace a platform part.

1. Key points to replacement decision

PARTS	WEAR DESCRIPTION	DECISION	
ARMS	Wear on the painting	To be checked carefully on next level 1 procedure	
	Impact on the painting (less than 0,3mm depth)		
	Corrosion mark	REPLACEMENT	
	Bending	REPLACEMENT	
	Serious Impact	REPLACEMENT	
	Rotation difficulties	Check screws as well	REPLACEMENT (arm or screws)
RATCHET	Serious Impact	REPLACEMENT	
	Corrosion	REPLACEMENT	
	Not operational	Check spring	REPLACEMENT (Ratchet or spring)
RATCHET SPRING	Lack of stiffness	REPLACEMENT	
CABLES	Start rupture	REPLACEMENT	
	Eyelets deformation	REPLACEMENT	
NETS	3 damaged seams on the rug	REPLACEMENT	
	1 damaged seam on the arm connection	REPLACEMENT	
MAST STRAP	Deformation of a steel fastener	REPLACEMENT	
	1 damaged seam on a loop	REPLACEMENT	
	1 damaged seam on a steel fastener	REPLACEMENT	
MAIN LIFTING RING	Wear on the painting	To be checked carefully on next level 1 procedure	
	Deformation	REPLACEMENT	
	Crack	REPLACEMENT	

2. Training procedure

The training procedure is conducted as follows:

1. A demonstration of the manipulations is done by the instructor: an Escape International member or an Escape International distributor.
2. Then users practice the exercises several times until success. The instructor will decide the end of the exercise.

For level 2 maintenance training, the exercises are the following:

Maintenance training. LEVEL 2
▪ **Net replacement (involves two arms disassembly)** ▪ **Short, long and peripheral cables replacement** ▪ **Ratchet and ratchet spring replacement**

3. Comment on this training stage

Because of its complexity, the net replacement operation allows to achieve the main goal of Maintenance training Level 2.

Note that for all screwed assembly, the following procedure must be respected. It will prevent the assemblies to be weakened by vibrations.

1. Remove grease from the 2 bolts parts (screw and nut) with LOCTITE 7063 degreaser.
2. Put LOCTITE 7649 spray activator on the 2 parts (screw and nut)
3. Put a complete turn of thread stop LOCTITE 243 on the third thread of the screw.
4. Tighten at the correct torque:

Material / Material	Screw	Screw tightening torque
Stainless / Aluminium	M6	5 Nm
Stainless / Stainless	M6	8 Nm
Stainless / Aluminium	M8	9 Nm
Stainless / Stainless	M8	19 Nm
Stainless / Stainless	M10	30 Nm

5. Mark all screwed bolts with a trace of red paint

The axles used as support for the mast strap extremities are longer than the 4 others.

The two mast strap extremities are different: 60° angle for the cross base side and 90° angle for the head side

Remarks on Screws & Bolts
Given torque and procedures

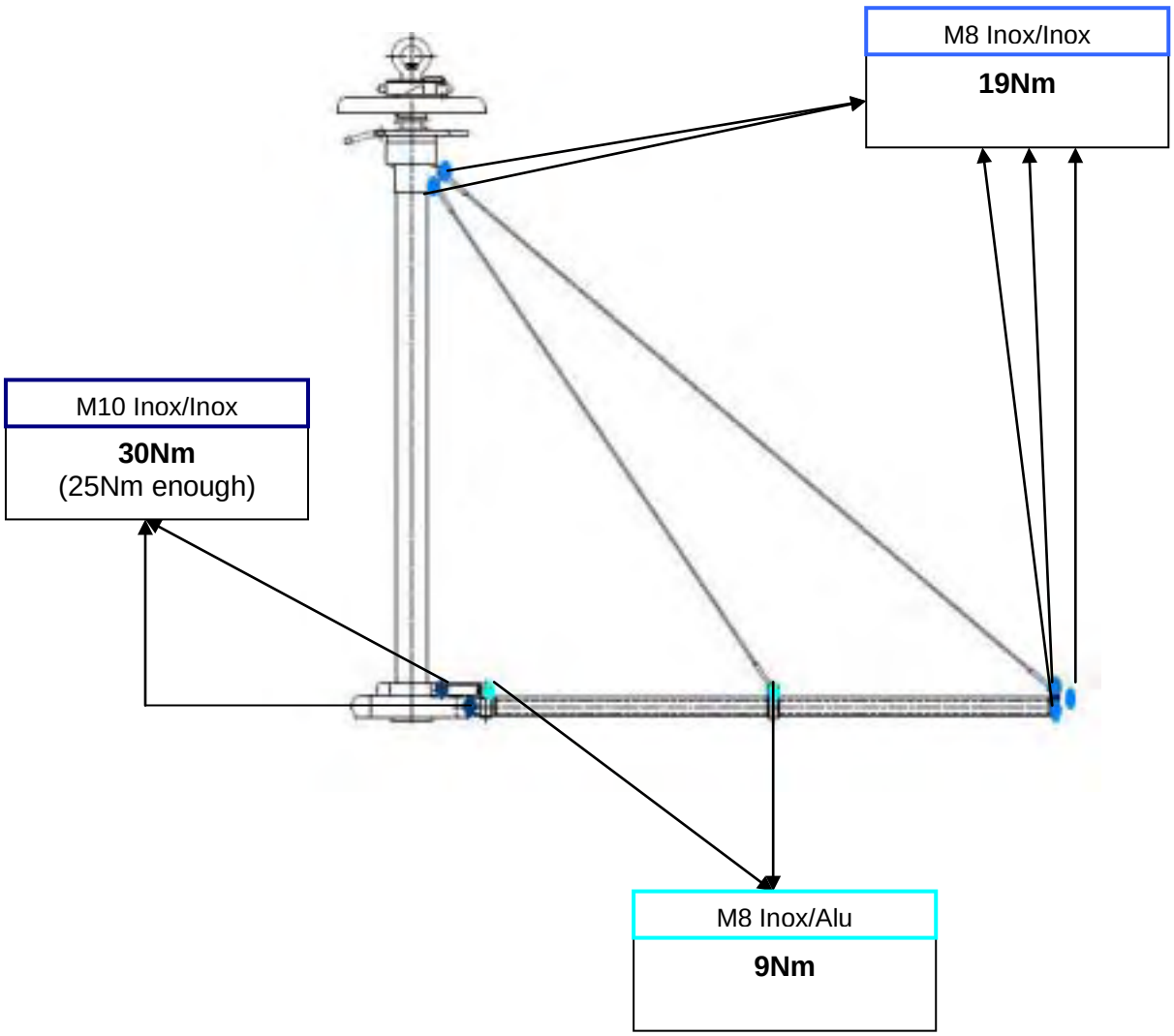
Preliminary

- The given procedure must be respected for all screwed assembly.
- It is better to give the torque on the Bolt rather than giving it to the axle or screw. . Use the torque wrench with socket 6 or 17 open end wrench, maintaining the screw or axle with correct bit.
- A minimum of 25Nm is enough, regarding the M10 given torque.

Given torque. Tools

Link	Screws & Bolts	Hex socket or wrench // Bit [Flat nut] // [Axle]	Torque
Arm/Cross base	M10 Axle Grower slice PTFE slice Flat nut	17//6	30Nm
Ratchet/Cross Base	M10 Axle Grower slice Flat nut	17//6	30Nm
Ratchet stop	M8 CHc Axle Grower slice	No Flat nut//6	9Nm
Short cable/ Arm	M8 Axle Grower slice	No flat nut//5	9Nm
Short cable/Head	M8 Axle Grower slice Flat nut	13//5	19Nm
Long cable/Arm Long cable/head	M8 Axle Grower slice Flat nut	13//5	19Nm
Peripheral cable/Arm	M8 Axle Flat nut	13//5	19Nm

Given Torque



c. Level 3: General inspection procedure

Every 5 years or 1000 cycles, platform must return to manufacturer for general inspection. You can present operations performed at this level, as described in the maintenance manual pp 33-34:

PLATFORM

- Replacement of the 5 nets
- Replacement of the 15 Cables (Long, short, peripheral)
- Replacement of the cable axles (Bolts/nuts)
- Replacement of the 10 safety belts
- Replacement of the locking ratchets, if necessary
- Check of the head, correct rotation and no cracks and corrosion
- Internal mast check, no deformation, corrosion and cracks in particular on the welded parts
- Check of the Arms
- Check of the Cross Base

SHACKLE

- No deformation and cracks on the shackle
- Check safety spindle on the shackle

BRAKING DEVICE

- Correct functioning check
- Check pulleys
- Will be rectified if defect is spotted

III. Users training

Users training is intended to train:

- The driver. Responsible of the platform on-board the helicopter. He leads all the related actions: fitting, opening, guiding on the objective, landing, take-off.
- The platform leader. He is responsible of people on-board the platform.
- The pilot. He must know flight specifications and communications procedures.

a. Presentation

Confer ***Users presentation***

b. Driver

1. Practical presentation

Driver must be trained with the braking device and the opening system.

Practical presentation of the selector and the locking head:

- demonstration on how to open and close the platform
- how automatic and manual modes are selected.

2. Training procedure

The training procedure is conducted as follows:

1. A demonstration of the manipulations is done by the instructor: an Escape International member or an Escape International distributor.
2. Then users practice the exercise several times until success. The instructor will decide the end of the exercise.

Users training. Driver part.
▪ **Fit in the platform (Bag, braking device, rope, sling safety strap)** ▪ **How to fit the braking device and how to place the rope in it.** ▪ **Braking device handling**

3. Comment on this training stage

The platform must be fitted for a lateral use as described in the user manual pp 19-26.
Propose a training on how to fit the braking device, and how to place the rope in it.

When platform is landed, the rope must be removed from the braking device.

The sling safety strap is a new equipment. There is no reference to it in both manuals. It aims at giving another level of security for the sling hook, in case of uncontrolled dropping of the rope.

SLING SAFE

Sling Safe is a safety equipment for the cargo hook transport.
It has been developed by John Holstein from Lite Flite for the lateral use of the Type A Platform.
Cargo hook can be automatically released from the pilot electronic command. Sling Safe has been developed to avoid dramatic consequences of an undesired releasing. If an inappropriate re leasing occurs, the rope remains linked and secured to the helicopter by safe sling. If releasing is necessary, a manual mode allows to release the rope. This manual mode is based on the three ring system.

Released hook: the rope remains fixed and secured by Safe Sling equipment.

SLING SAFE

Three rings system

Manual opening

Pull the red handle

The yellow cable releases the rings

Yellow cable pulled out

Rings released: Sling safe is opened

c. Pilot

Present in-flight specifications to the pilot.
Present communications procedure between pilot and driver to both of them.

1- Pilot info : « **H- 5 mn** »
The driver open the door and fix the braking handle on the winch hook outside
The driver place the rope into the braking device and hoist the platform outside
Driver answer : "**Platform ready and locked".**

2- Pilot info : « **H- 30 s** »
The driver unlocked the head of the platform.
Driver answer: « **Platform unlocked** »

3- After pilot has lost visual on the platform , the driver guides the pilot to where and when he must land the Platform.
The pilot stabilizes the helicopter vertically above the recuperation area at 100 feet.

4- Hovering flight. Pilot info : **"Authorization for dropping"**

5- The driver push the braking handle:
- Coming down of the Platform.
- Very quickly after the platform dropping, the driver releases quickly the braking handle.
- Opening of the Platform
- Driver info : **"Platform is opened "**

6- The driver guides the pilot to land the Platform on the ground.
- Driver info : **"Platform landed"**.

7- The driver pulls out the axe of the braking device, open it and pull out the rope.

8- Driver info to the pilot : **"Braking device free"**.

9- The leader confirms: **"ready to take off"**.

10- Driver info to the pilot : **"People inside and secured ready to take off"**.

11- Take off vertically in respect of the flight limitation.

d. Leader

1. Practical presentation

Leader must be trained on how to get people board the platform and how to secure them.

Practical presentation on how to secure people on board:

- use of safety belts
- passengers position during flight phases

Visual signs will be decided to order the lifting of the platform and the dropping of the rope.

2. Training procedure

The training procedure is conducted as follows:

1. A demonstration of the manipulations is done by the instructor: an Escape International member or an Escape International distributor.
2. Then users practice the exercise several times until success. The instructor will decide the end of the exercise.

Users training. Leader part.
▪ **The following description will be done on-ground in a simulation of each phase:** o **Take off procedure** o **In-flight** o **Landing procedure** o **After landing**

Take off procedure:

- Rescued people go to the extraction area on the leader order.
- Once the platform lands, the leader gives order to board the platform and to secure themselves to the first five persons (one per net). They wait standing up. The 4 last persons wait outside the platform.
- The Leader checks if each passenger is secured and orders them to squat down.
- The last 4 persons get on board and secure themselves. The Leader checks and orders them to squat down.
- The Leader secures himself and asks a passenger to check.
- The Leader indicates the driver that the platform is ready to take off using the agreed visual sign (e.g. circular arm movement).

In-flight:

- Passengers must sit down.
- As far as possible, passengers must avoid any violent movement.
- Passengers check at each other.

Landing procedure:

- Before reaching the ground, the leader orders passengers to squat down (or stand up).
- Once landed, passengers free themselves on order.
- Passengers follow the direction given by the leader (3 o'clock or 9 o'clock of the helicopter).

After landing:

- Lifting of the rope

Or

- Dropping of the rope

The driver leads the above operation after receiving the leader visual sign.
e.g.

- Lifting of the rope: circular arm movement.
- Dropping of the rope: one arm parallel to the ground; the other one doing circular movement under the fixed one.

IV. Inflight training

Presentations done, the in-flight training program is made of three complete procedures.

A complete procedure is to

- Fit in the platform in the helicopter
- Drop the platform
- Extract people
- Flight
- Land
- Drop or lift the rope
- Fit the platform again

Three flights (two in automatic mode, the other in manual mode) can be proposed.

V. Conclusion. Comments. Final Briefing

Training ends with a final briefing.

VI. Example of training planning

	Morning	Afternoon
Day 1	**Presentation** Overall presentation Platform parts presentation Maintenance presentation	**Users training. On ground** User presentation Driver part Pilot part: Crew and pilot communication
	Maintenance training Level 1, 2 and 3	**Users training On ground** Leader part
	Briefing	*Briefing*
Day 2	**Practical. In-flight** Three flights	
	Final Briefing	
Day 3	Unpredicted delay or rehearsal of chosen exercises	Unpredicted delay or rehearsal of chosen exercises

VII. Internal documents: improvements on demonstration

Trainings themselves shall improve future trainings.
Let improvements be beneficial to all of us.

An internal communication sheet intends to make our training as best as possible all along the coming training.

Confer ***Training driving sheet***

Training driving sheet

Name	Company	Client	Date

Parts	Your comments	Client comments
Presentation		
Suggested improvements		

Parts	Your comments	Client comments
Maintenance training		
Suggested improvements		

Parts	Your comments	Client comments
Users training		
Suggested improvements		

General comments

Training
Central use

Introduction

Training session aims at giving a guide line for future users to allow them to set up their own protocol.

Training is provided for two kinds of users:

- On-ground operators, responsible of maintenance.
- Operational users.

This training program is therefore divided in two parts: maintenance training and users training.

Each part is divided itself into a theoretical presentation and a practical session.

The last document is meant to share our experiences in order to improve our method.
Feel free to propose any improvements, any comments.

I. Presentations

a. Overall presentation

Confer ***Overall presentation***

b. Presentation of platform parts

Confer ***Parts presentation***

c. Maintenance presentation

Confer ***Maintenance presentation***

II. Maintenance training

Three levels of maintenance are to be presented.
Level one and two are of users responsibility.

Level three is a complete maintenance to be done by Escape International. Platform must be returned to manufacturer for general inspection every 5 years or 1000 cycles.
We will present what is done in this general inspection.

a. Level 1: visual checking

The first level of maintenance is made of simple recurrent visual checking.
It can be done before or after each use or once a month.

Make the visual checking as described in the maintenance manual (monthly check list):

- Rope
- Safety belts
- Platform nets
- Braking device
- Platform structure
  - Insist on the fact that any intervention on the locking system needs a return to manufacturer factory.
- Shackle
- Guiding ring

Maintenance manual pp.3-4 gives a detailed description of the points to be checked.

To help you in this matter, and to keep a memory of actions taken, confer **monthly check list.**

Maintenance training. LEVEL 1
▪ **Visually checking of the platform with the monthly check list document**

MONTHLY CHECK LIST

Date		Maintenance operator	

Maintenance operation		Checked	Comment (to be changed…)	Action (replacement…)
Rope	Cleanliness (fraying, shrinks, cuts)			
	Knot			
	Drying			
	Loops shields			
Safety Belts	Cleanliness			
	Rings and carbiner			
	Knot			
	Drying			
Platform nets	Damaged seam			
	Cleanliness			
	Drying			
Braking device	Grooves			
	Fixed pulley play			
	Cam pulley play			
	Rope rubbing zones			
Platform structure	Opening, unlocking of the arms			
	Rotation of the wheel, translation of the plate			
	Blocking of the fasteners			
	Impact on arms, head and mast			
	Arms rotation play			
	Spring			
	Ratchet			
	Cables start rupture			
	Eyelets deformation			
Shackle	Deformation			
	Security pin			
Guiding ring	Cleanliness			
	Rope rubbing zone			

b. Level 2: operators actions

Maintenance operators must be able to replace:

- Arms
- Ratchet or ratchet spring
- Cables: long one, short one and peripheral one
- Nets
- Mast strap
- Main lifting ring

According to the level 1, operators should decide to replace a platform part.

1. Key points to replacement decision

PARTS	WEAR DESCRIPTION	DECISION	
ARMS	Wear on the painting	To be checked carefully on next level 1 procedure	
	Impact on the painting (less than 0,3mm depth)		
	Corrosion mark	REPLACEMENT	
	Bending	REPLACEMENT	
	Serious Impact	REPLACEMENT	
	Rotation difficulties	Check screws as well	REPLACEMENT (arm or screws)
RATCHET	Serious Impact	REPLACEMENT	
	Corrosion	REPLACEMENT	
	Not operational	Check spring	REPLACEMENT (Ratchet or spring)
RATCHET SPRING	Lack of stiffness	REPLACEMENT	
CABLES	Start rupture	REPLACEMENT	
	Eyelets deformation	REPLACEMENT	
NETS	3 damaged seams on the rug	REPLACEMENT	
	1 damaged seam on the arm connection	REPLACEMENT	
MAST STRAP	Deformation of a steel fastener	REPLACEMENT	
	1 damaged seam on a loop	REPLACEMENT	
	1 damaged seam on a steel fastener	REPLACEMENT	
MAIN LIFTING RING	Wear on the painting	To be checked carefully on next level 1 procedure	
	Deformation	REPLACEMENT	
	Crack	REPLACEMENT	

2. Training procedure

The training procedure is conducted as follows:

1. A demonstration of the manipulations is done by the instructor: an Escape International member or an Escape International distributor.
2. Then users practice the exercises several times until success. The instructor will decide the end of the exercise.

For level 2 maintenance training, the exercises are the following:

Maintenance training. LEVEL 2
▪ **Net replacement (involves two arms disassembly)** ▪ **Short, long and peripheral cables replacement** ▪ **Ratchet and ratchet spring replacement**

3. Comment on this training stage

Because of its complexity, the net replacement operation allows to achieve the main goal of Maintenance training Level 2.

Note that for all screwed assembly, the following procedure must be respected. It will prevent the assemblies to be weakened by vibrations.

1. Remove grease from the 2 bolts parts (screw and nut) with LOCTITE 7063 degreaser.
2. Put LOCTITE 7649 spray activator on the 2 parts (screw and nut)
3. Put a complete turn of thread stop LOCTITE 243 on the third thread of the screw.
4. Tighten at the correct torque:

Material / Material	Screw	Screw tightening torque
Stainless / Aluminium	M8	9 Nm
Stainless / Stainless	M8	19 Nm
Stainless / Stainless	M10	30 Nm

5. Mark all screwed bolts with a trace of red paint

The axles used as support for the mast strap extremities are longer than the 4 others.

The two mast strap extremities are different: 60° angle for the cross base side and 90° angle for the head side

Remarks on Screws & Bolts
Given torque and procedures

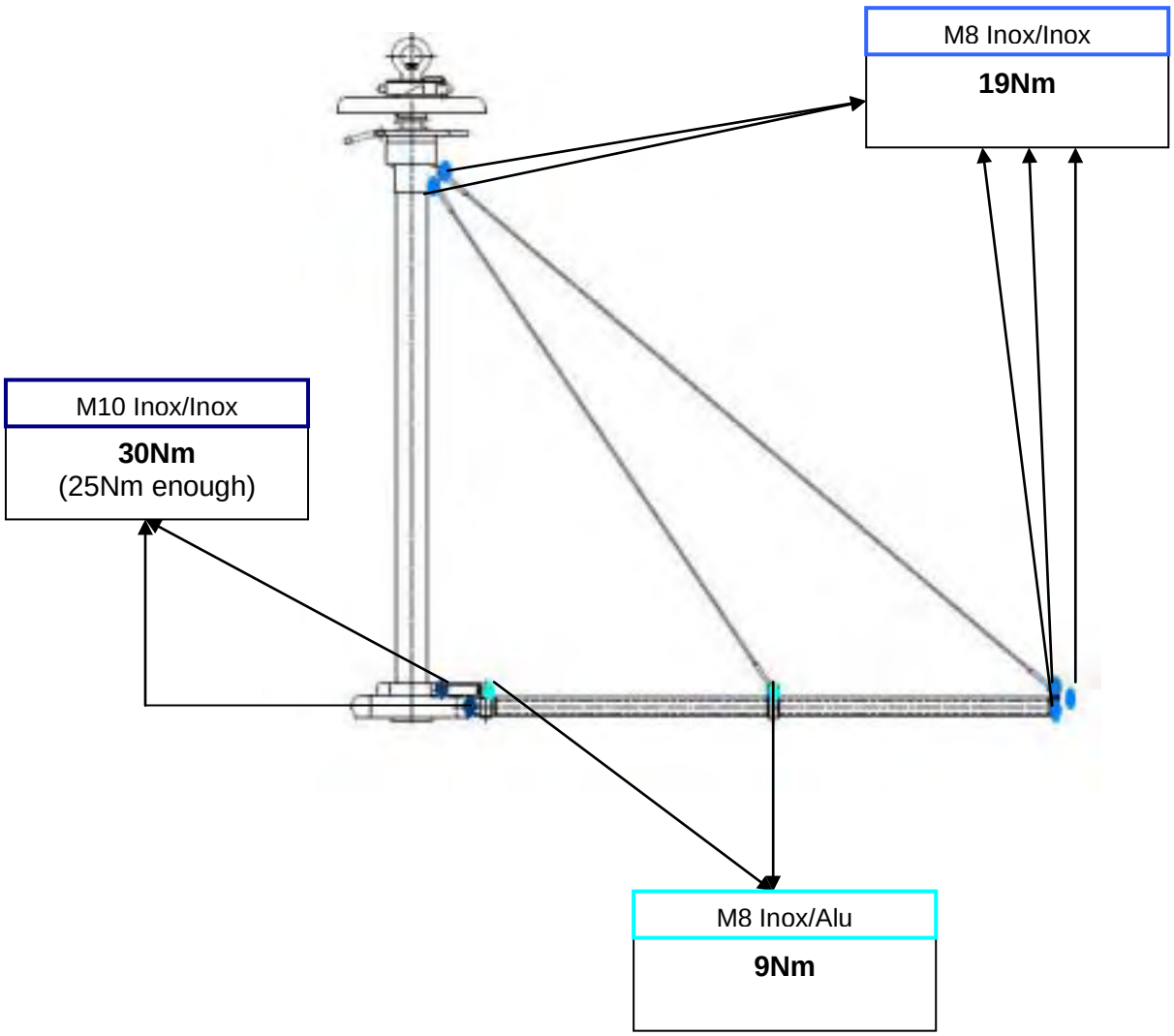
Preliminary

- The given procedure must be respected for all screwed assembly.
- It is better to give the torque on the Bolt rather than giving it to the axle or screw. . Use the torque wrench with socket 6 or 17 open end wrench, maintaining the screw or axle with correct bit.
- A minimum of 25Nm is enough, regarding the M10 given torque.

Given torque. Tools

Link	Screws & Bolts	Hex socket or wrench // Bit [Flat nut] // [Axle]	Torque
Arm/Cross base	M10 Axle Grower slice PTFE slice Flat nut	17//6	30Nm
Ratchet/Cross Base	M10 Axle Grower slice Flat nut	17//6	30Nm
Ratchet stop	M8 CHc Axle Grower slice	No Flat nut//6	9Nm
Short cable/ Arm	M8 Axle Grower slice	No flat nut//5	9Nm
Short cable/Head	M8 Axle Grower slice Flat nut	13//5	19Nm
Long cable/Arm Long cable/head	M8 Axle Grower slice Flat nut	13//5	19Nm
Peripheral cable/Arm	M8 Axle Flat nut	13//5	19Nm

Given Torque



c. Level 3: General inspection procedure

Every 5 years or 1000 cycles, platform must return to manufacturer for general inspection. You can present operations performed at this level, as described in the maintenance manual pp 33-34:

PLATFORM

- Replacement of the 5 nets
- Replacement of the 15 Cables (Long, short, peripheral)
- Replacement of the cable axles (Bolts/nuts)
- Replacement of the 10 safety belts
- Replacement of the locking ratchets, if necessary
- Check of the head, correct rotation and no cracks and corrosion
- Internal mast check, no deformation, corrosion and cracks in particular on the welded parts
- Check of the Arms
- Check of the Cross Base

SHACKLE

- No deformation and cracks on the shackle
- Check safety spindle on the shackle

GUIDING RING

- In case of wear or shred, replacement of straps
- Check and rectification of the metal surface in contact of the rope

BRAKING DEVICE

- Correct functioning check
- Check pulleys
- Will be rectified if defect is spotted

III. Users training

Users training is intended to train:

- The driver. Responsible of the platform on-board the helicopter. He leads all the related actions: fitting, opening, guiding on the objective, landing, take-off.
- The platform leader. He is responsible of people on-board the platform.
- The pilot. He must know flight specifications and communications procedures.

a. Presentation

Confer ***Users presentation***

b. Driver

1. Practical presentation

Driver must be trained with the braking device and the opening system.

Practical presentation of the selector and the locking head:

- demonstration on how to open and close the platform
- how automatic and manual modes are selected.

2. Training procedure

The training procedure is conducted as follows:

1. A demonstration of the manipulations is done by the instructor: an Escape International member or an Escape International distributor.
2. Then users practice the exercise several times until success. The instructor will decide the end of the exercise.

Users training. Driver part.
▪ **Fit in the platform (BK Hook, bag, braking device, rope, guiding ring)** ▪ **How to fit the braking device and how to place the rope in it.** ▪ **Braking device handling**

3. Comment on this training stage

The platform must be fitted for a central use as described in the user manual pp 29-33 .
Propose a training on how to fit the braking device, and how to place the rope in it.

Guiding ring must be fitted and properly centered before flight.

When platform is landed, the rope must be removed from the braking device.

c. Pilot

Present in-flight specifications to the pilot.
Present communications procedure between pilot and driver to both of them.

1- Pilot info : **“H- 5 mn”**
Place the platform on the trap door.
Driver answer : **“Platform ready and locked”.**

2- Pilot info : **”H- 30 s”**
The driver unlocked the head of the platform.
Driver answer: **“Platform unlocked “**

3- After pilot has lost visual on the Platform, the driver guides the pilot to where and when he must land the Platform.
The pilot stabilizes the helicopter vertically above the recuperation area at 100 feet.

4- Hovering flight. Pilot info : **“Authorization for dropping”**

5- The driver push the braking handle:
- Coming down of the Platform.
- At 5/6 meters before the end of the rope, the driver release quickly the braking handle.
- Opening of the Platform
- Driver info : **“Platform is opened”**

6- The driver guides the pilot to land the Platform on the ground.
- Driver info : **“Platform landed”**.

7- The driver pulls out the axe of the braking device, open it and pull out the rope.

8- Fit out the central ring to protect the rope during the flight.
- Place the rope inside the central ring.
- Hang the 4th strap
- Stretch the 4 straps.
- Driver info to the pilot : **“Braking device free and central ring stretched”**.

9- The leader confirms: ready to take off.

10- Driver info to the pilot : **“People inside and secured ready to take off”**.

11- Take off vertically in respect of the flight limitation.

12- The driver controls visually the central ring.

d. Leader

1. Practical presentation

Leader must be trained on how to get people board the platform and how to secure them.

Practical presentation on how to secure people on board:

- use of safety belts
- passengers position during flight phases

A visual sign will be decided to order the lifting of the platform and the dropping of the rope.

2. Training procedure

The training procedure is conducted as follows:

1. A demonstration of the manipulations is done by the instructor: an Escape International member or an Escape International distributor.
2. Then users practice the exercise several times until success. The instructor will decide the end of the exercise.

Users training. Leader part.
▪ **The following description will be done on-ground in a simulation of each phase:** o **Take off procedure** o **In-flight** o **Landing procedure** o **After landing**

Take off procedure:

- Rescued people go to the extraction area on the leader order.
- Once the platform lands, the leader gives order to board the platform and to secure themselves to the first five persons (one per net). They wait standing up. The 4 last persons wait outside the platform.
- The Leader checks if each passenger is secured and orders them to squat down.
- The last 4 persons get on board and secure themselves. The Leader checks and orders them to squat down.
- The Leader secures himself and asks a passenger to check.
- The Leader indicates the driver that the platform is ready to take off using the agreed visual sign (e.g. circular arm movement).

In-flight:

- Passengers must sit down.
- As far as possible, passengers must avoid any violent movement.
- Passengers check at each other.

Landing procedure:

- Before reaching the ground, the leader orders passengers to squat down (or stand up).
- Once landed, passengers free themselves on order.
- Passengers follow the direction given by the leader (3 o'clock or 9 o'clock of the helicopter).

After landing:

- Lifting of the rope

Or

- Dropping of the rope

The driver leads the above operation after receiving the leader visual sign.
e.g.

- Lifting of the rope: circular arm movement.
- Dropping of the rope: one arm parallel to the ground; the other one doing circular movement under the fixed one.

IV. Inflight training

Presentations done, the in-flight training program is made of three complete procedures.

A complete procedure is to

- Fit in the platform in the helicopter
- Drop the platform
- Extract people
- Flight
- Land
- Drop or lift the rope
- Fit the platform again

Three flights (two in automatic mode, the other in manual mode) can be proposed.

V. Conclusion. Comments. Final Briefing

Training ends with a final briefing.

VI. Example of training planning

	Morning	Afternoon
Day 1	**Presentation** Overall presentation Platform parts presentation Maintenance presentation	**Users training. On ground** Users presentation Driver part Pilot part: Crew and pilot communication
	Maintenance training Level 1, 2 and 3	**Users training On ground** Leader part
	Briefing	*Briefing*
Day 2	**Practical. In-flight** Three flights	
	Final Briefing	
Day 3	Unpredicted delay or rehearsal of chosen exercises	Unpredicted delay or rehearsal of chosen exercises

VII. Internal documents: improvements on demonstration

Trainings themselves shall improve future trainings.
Let improvements be beneficial to all of us.

An internal communication sheet intends to make our training as best as possible all along the coming training.

Confer ***Training driving sheet***

Training driving sheet

Name	Company	Client	Date

Parts	Your comments	Client comments
Presentation		
Suggested improvements		

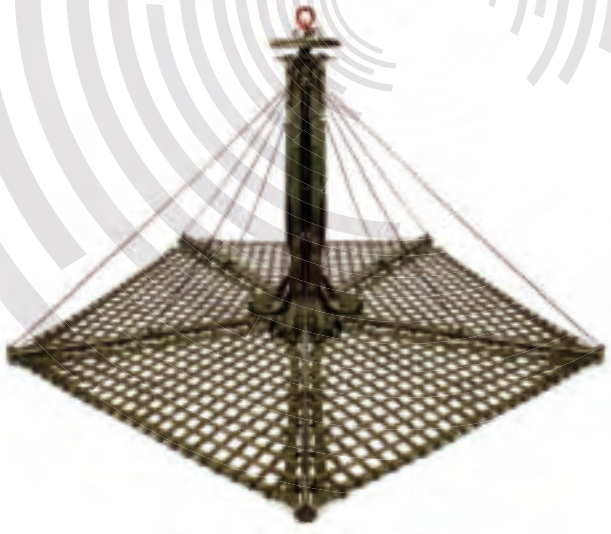
Parts	Your comments	Client comments
Maintenance training		
Suggested improvements		

Parts	Your comments	Client comments
Users training		
Suggested improvements		

General comments

USER MANUAL

Escape Platform
Type A1 / A2



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Overview

Designed for any helicopter, utility or combat, civilian or military, the Rescue Platform type A is a global solution to rescue operations in any extreme environment.

Compared with the existing equipments (ladder, winch, "forest penetrator"), it is characterized by the following advantages:

- *Great flexibility in use (any situation, any environment)*
- *Doesn't affect the flight performance, thanks to its folding concept*
- *Simplicity and speed of extraction (< 1 mn)*
- *Instant capacity of 10 rescued people*

The survival of a person, who is exposed to an extremely dangerous situation, relies on the promptness of the rescue.

Most of the critical or lethal situations require the rescue by helicopter: emergency, remote area, ocean.

In most cases, the helicopter landing is impossible, due to the environment or the lie of the land.

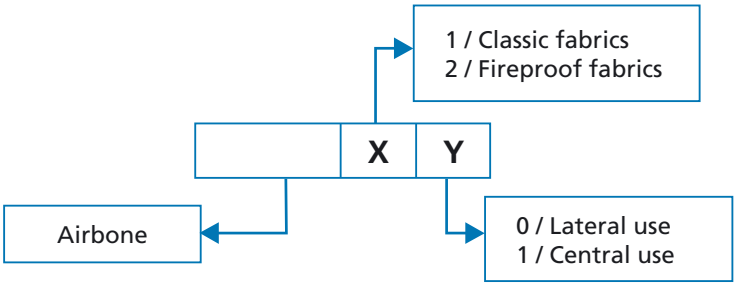
General description

- The loading capacity is 10 people or 1 500 kg (3 306 lbs)
- 5 triangular nets and 5 articulated arms which form a pentagon when deployed
- Weight of 53 kg (117 lbs)

- In folded position, the platform is:
  - 1 531 mm (60 inches) height
  - 350 mm (13.8 inches) diameter

- In opened position, the platform has a diameter of 2 900 mm (114 inches) and a surface of 7 square meters

Different Platform types



Example: Platform type A 21 → *Fireproof platform on central use*

COLOR CODES	Green : Gr	Sand : DS	Red : Red	Orange : Or

Standard Scenario

Platform in cargo, ready to be used, has no impact on flight performances during transit

Platform dropping

Controlled descent (with the braking device)

Automatic or manual opening

Fast boarding of staff or victims

Extraction

Differences between central and lateral use

LATERAL USE (TYPE A10 / 20)

Most rescue helicopters use a hoist which allows the deployment of the platform.

- The hoist is used as stowage point during platform descent
- The load is next transferred from the hoist to the main sling hook near the helicopter centre of gravity

For helicopter equipped with skids and regarding hoist skids, platform and rope clearances refer to your “Specific Use” of your helicopter model.

CENTRAL USE (TYPE A11 / 21)

- Type A11 is deployed directly through the hatch and fastened to the main gear box
- Before take-off, the Braking Device must be removed
- The helicopter crew chief has a direct view on the deployed platform

Platform body

The main characteristics and body parts of the platform are:

Max Total Load:
1 500 kg (3 306 lbs)

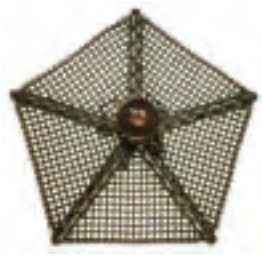
In-flight gyratory prevented by the opened pentagon shape

Folded platform

Unfolded platform

The opening of the platform is possible in two ways:

- **Automatic**
  Triggered from the helicopter by kinetic energy during the descent
- **Manual**
  By an operator on the ground pushing firmly the plate

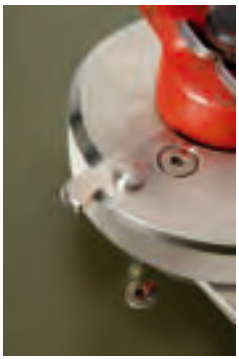


Ten Safety Belts fixed on the mast

LOCKING SYSTEM AND BINDING PLATE

A locking system prevents the platform from deploying unnecessarily in transit or during descent when the automatic opening is not required.

A safety latch locks the rotation of the selector in one of the positions



A visual and Tactile Mark shows the unlocked position

Locked position

In the locked position, the plate can't be triggered and the platform can't be opened.

This position is reached as the selector is turned clockwise, opposite the Tactile Mark.

To lock the platform:

- Keep the safety latch down
- Turn the selector clockwise

Unlocked position

In the unlocked position the plate must be manually pushed or automatically triggered to unfold the platform.

This position is marked.

When the selector is turned counterclockwise, the security latch and Tactile Mark are face to face.

To unlock and to allow the opening of the platform:

- Keep the safety latch down
- Turn the selector counterclockwise
- Check mark position

BOARDING THE PLATFORM

Docking rings

Platform
Max Total Load
1 500 kg
3 306 lbs

Charge
(human or material)

Must be equally balanced on the platform

On platform Safety Belts

1 Safety Belt
=
250 kg max
550 lbs

Safety Belt can hold a maximum load of 250 kg (550 lbs)

Children and small people

For children or small people, in order to reduce the length of the Safety Belt a carbiner must be added between the Safety Belt and one of the dock strap

Dock straps bound on the mast

Can be used as a handle for the boarded people or to hang bags or material with carbiners

Each of these straps loops can hold a load of:
150 kg (330 lbs)

1 dock strap
=
150 kg max
330 lbs

Rope and Bag

The rope between the helicopter and the platform is 25 m long

Length	25 m (82 ft)
Diameter	28 mm
Max load	15 500 daN
Elasticity	10 % of the length
Material	High strength polyamide (Type A1) High strength aramid (Type A2) fireproof

- The rope is the most weakest part of the system
- Don’t cart it around on abrasive surfaces
- It should not be in contact with metal parts during its storage or transport

The bag is used for the transport of the rope and the accessories of the platform (fasteners…).

But it is mainly designed as a rope distributor during the descent of the platform.

- Two straps outside of the bag allow its fixation to the floor docking point
- Two straps inside the bag maintain the winding of the rope

This correct winding is necessary for correct and fast unwinding and rapid fitting of the rope from helicopter to the platform.

Braking device

The braking device controls the descent of the platform and ensures the correct opening of the platform in automatic mode.

Braking Device
CANNOT handle
heavy load

Braking Device
MUST BE
removed before:
- lifting loaded platform
- flying with empty platform

Locking spindle

Locks the device in a locked position and can be removed by pressing a button on the axis in the centre of its body.

The break handle

Allows to control the speed of the platform descent.

Hooks

BK 10/08

This Hook allows the interface between the rope device and the helicopter (Central Gear / Sling).

This Hook mouth must be positioned with its opening facing forward.

It can be unlocked by pushing down its lock trigger

The Delta Carbiner

The Delta Carbiner is the interface between the Braking Device and the helicopter (main gear box).

Shackle

The Shackle is the interface between the rope and the platform.

It is locked by a bolt and a little spindle.

Like the Braking Device's one, this spindle is unlocked by pressing on its central axis.

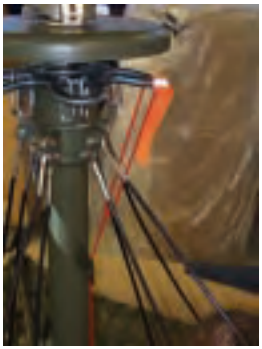
Ratchets folding strap

This strap makes the folding easier.

It keeps the ratchets in the vertical position, allowing the platform to be easily folded by a single operator.

It must be used only during the folding and removed immediately. Otherwise the platform won't be able to be locked in open position when unfolded.

Remove
after folding



Sounding Line

This line, attached below the platform, has 3 purposes:

- To give the crew a visual reference of the platform altitude prior landing
- To help lift the platform into the cabin
- To spread out the static electricity when in contact with the ground

Guiding Ring (central use only)

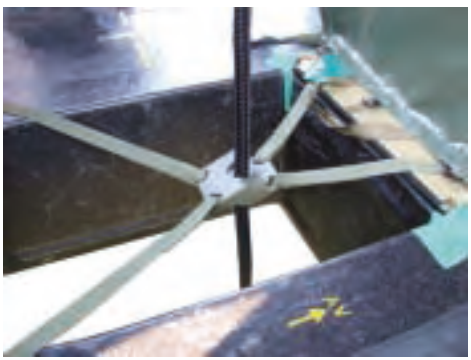
The guiding ring is an other specific accessory of the central use.

It provides a safety guiding of the rope during flight with empty or loaded platform.

This prevents the rope from being damaged by touching the edges of the hatch or prevents undesirable movements destabilizing the helicopter.

This equipment is composed of:

- 4 adjustable straps fastened with carbiner to the hold's stowing points
- 4 sleeves for the tidying and protecting the straps
- A metallic guiding open ring



Platform in flight

Platform configuration	Closed	Load 0 - 69 kg 0 - 150 lbs	Load 70 - 259 kg 151 - 570 lbs	Load 260 - 629 kg 571 - 1 385 lbs	Load 630 - 1 500 kg 1 386 - 3 300 lbs
Maximum Indicated Speed (MIS)	90 km/h 50 kts	80 km/h 40 kts	140 km/h 75 kts	180 km/h 100 kts	
Climb Rate at MIS	No limitation				

Environmental conditions / limits

Temperature	-30°C - +50°C
Type A2 Fire withstand	FAR 25 § 853 appendix F1 (A1) 850°C/1 550°F
Hygrometry	0 to 100 %
BK Hook / Strength	3 150 kg
Delta Carbine / Strength	2 450 kg
Braking Device / Strength	300 kg/660 lbs MAX
Rope	Payload = 2 500 kg Maximum load = 15 000 kg
Shackle / Strength	6 500 kg
Platform	Weight = 53 kg Max load = 1 500 kg
Safety Belts	250 kg Max
Docking straps	150 kg Max
Maximum omni directional wind	50 km/h - 30 kts

LATERAL HOIST USE

Fit in

1
- Secure the rope bag near the door (by hanging loosely its 2 straps on hold stowage points)
- The bag must be placed in between the hoist and the sling hook
- The helicopter door needs to remain open for clearance of the rope fixed on the cargo hook

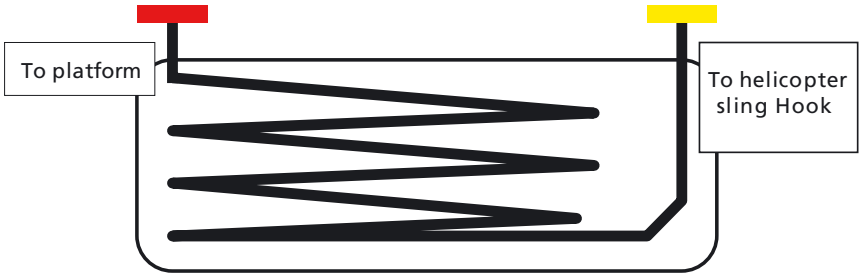
2 Hitch the yellow extremity of the rope to the cargo hook

3 Stretch the rope from the charge hook to the rope bag

4 Wind the rope in the bag by finishing with the red extremity attached to the platform (red extremity)

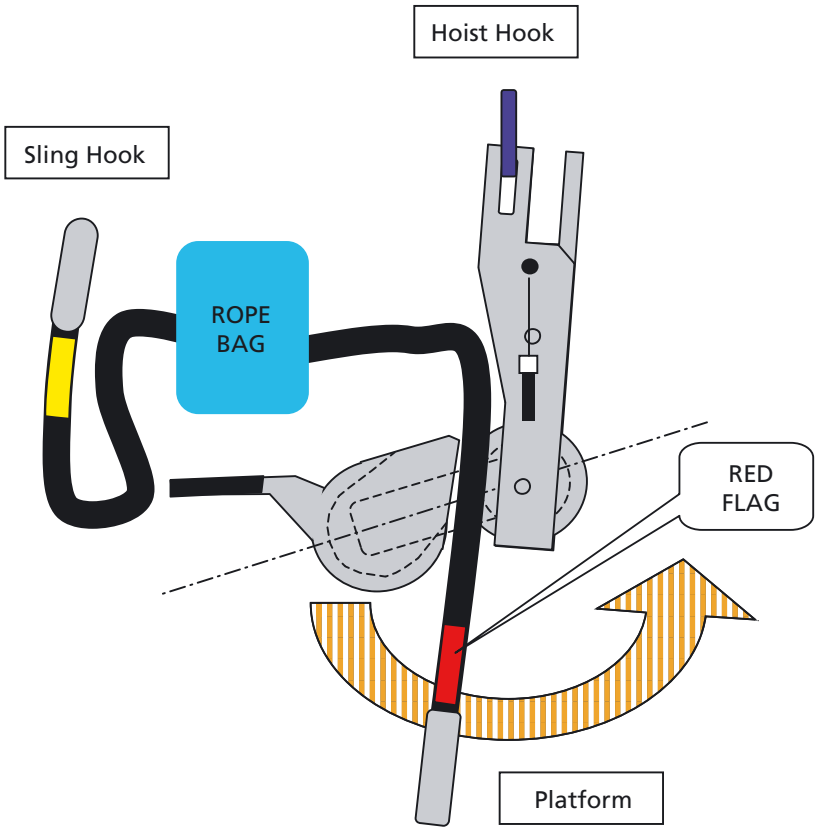
5 Open and immobilize the flap cover of the bag

Red ribbon on top of the bag (platform side)
Yellow ribbon on bottom of the bag



6 Position the closed platform on the floor near the door

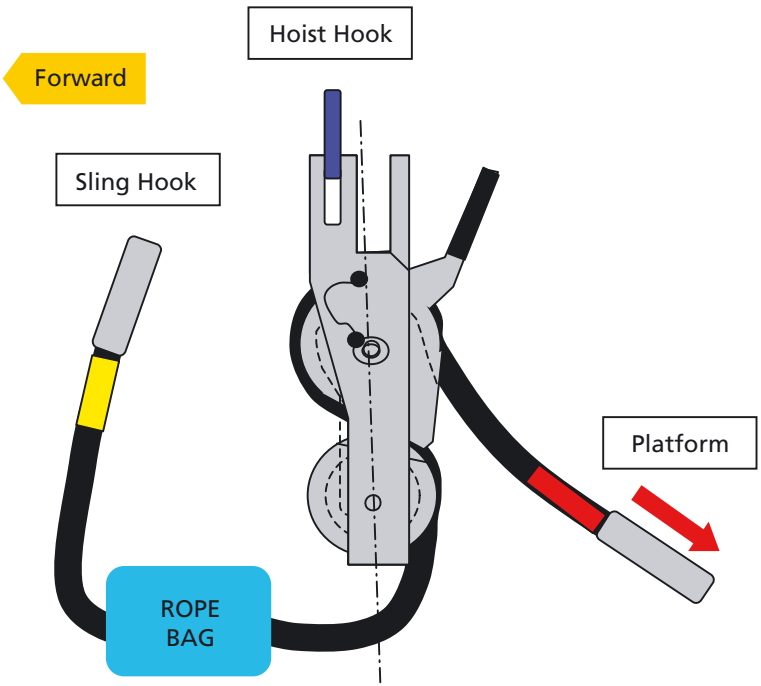
7 Use the Delta Carbiner to hang the Braking Device on the hoist hook



8

Close the Braking Device and lock it with the attached spindle.

Give enough slack to hang the red rope extremity to the platform.



9

Fasten the red rope extremity to the Platform using the Shackle:

- U curve side on the rope
- Flat side on the main platform ring

Secure shackle with the security pin attached to the bolt.

Stretch the rope between the platform head and the Braking Device.

CAUTION!!

Keep the rope TENSED
between the cargo hook and the door

10 Gently lift the platform with the hoist until the Platform is suspended outside

11 Set up the automatic opening system to the required mode

Automatic	Manual
➤ Platform opens itself at the final braking during the descent ➤ Keep the latch down and rotate the selector counterclockwise **(CCW)**	➤ Platform must be opened by an operator on the ground ➤ Keep pushing on the latch and rotate the selector clockwise **(CW)** ➤ The Platform is open on the ground by pressing both hands flat on each side of the plate

In case of failure or emergency
The platform can still be used manually
Ensure the locking system is in the unlocked position

12 Check clearance zone for the unwinding of the rope (bag, route of the rope)

13 Nobody must be seated on the rope or have it around their legs

Begin platform descent

The braking of the platform descent is done by pulling out the brake handle of the device

Pushing the handle on the device will result in a release and quasi free fall of the platform

- We recommend a dropping speed of about 2,5 m/s (8 ft/s) This includes human reaction time (1/2 s) to initiate the brake release to trigger deployment

14 Finish the descent and trigger the opening before tensioning the rope between the hoist and the hook charge, you must keep a slack between them

For manual opening	For automatic opening
Push gently on the handle to lower the platform completely at required speed.	Push gently on the handle to lower the platform at required speed. Near the end of the rope (2 m) or at the length signified by a colored mark on the rope release the handle quickly and completely. The platform will be instantly braked and the opening will be triggered by the shock of the deceleration.

Landing the platform

Landing the platform could be done:

- On an obstacle with a maximum height of 30 cm / 1ft
- On a slope < 10 %

The Braking Device is **not** designed to withstand the nominal load (1 500 kg / 3 306 lbs), to prevent its damage:

WHEN THE PLATFORM IS LANDED, THE ROPE MUST BE REMOVED FROM THE BRAKING DEVICE

As the platform lands, the rope becomes slack

- Remove the security spindle of the Braking Device and open it
- Remove the rope of the flat part of the pulley, the rope may abruptly descend and now be supported by the charge hook
- Remove the Braking Device of the hoist hook

The system is now ready to take off

- The length of the rope can vary by its 10 % elasticity
- The platform has been certified with a static load of 4 500 kg (9 900 lbs) which corresponds to a maximum acceleration coefficient of 2G with a nominal load of 1 500 kg
- Take off vertically respecting flight limitation

Fit in

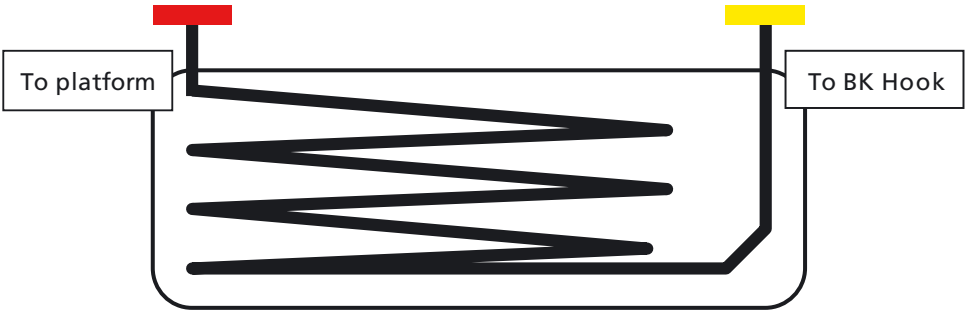
- Hang the BK10-8 Hook on the central gear box
- Opening facing forward

- Use the Delta Carbiner to hang the Braking Device on the BK Hook
- The brake handle facing the rear
- Or use the painted sign indicating the front

Winding the rope in the bag

- Finish winding the rope by the edge that must be attached on the platform (red extremity)

Red ribbon on top of the bag (platform side)
Yellow ribbon bottom of the bag

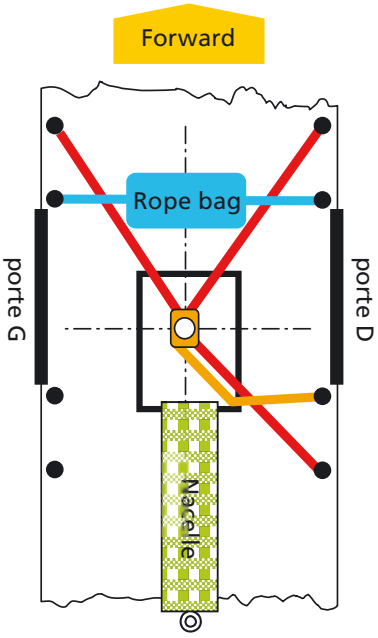


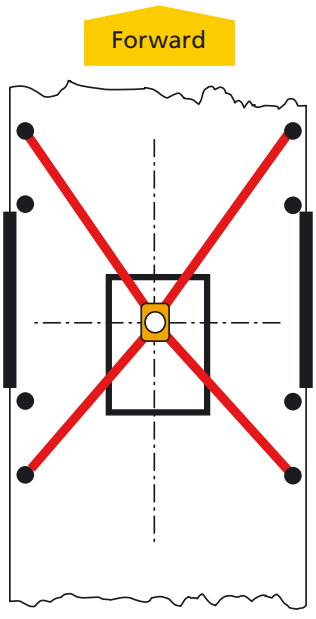
- Place the rope bag aside of the hatch
- Immobilize the flap cover of the bag
- Use the 2 fixation straps on the stowage points to immobilize the bag (without tension)
- Coil these straps in their sleeves

Position the closed platform laid on the floor:

- Backward the hatch
- Bottom of the platform facing forward

- Position the guiding ring vertically to the hook
- The carbiner attached on the stowage points
- Set the length of the forward straps and then the length of the backward straps
- Coil the slacks of these straps in their sleeves
- Put the guiding ring in standby under the bag by taking out the backward left strap

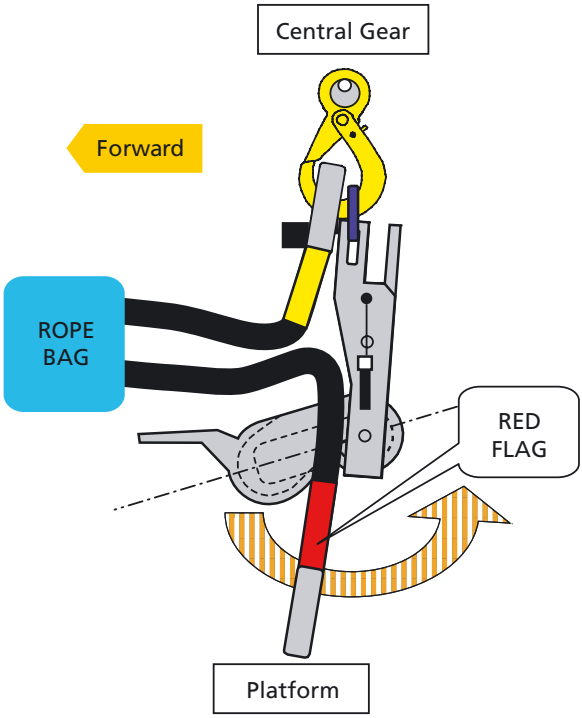

Forward
Rope bag
porte G
porte D
Nacelle

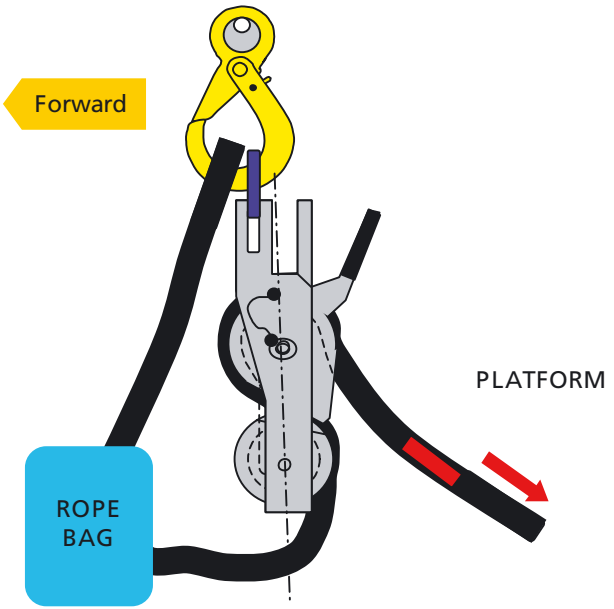

Forward

Fit of the Braking Device

Place the yellow ribbon side of the rope in the BK10-8 Hook

- Remove the locking spindle of the device
- Place the rope on the flat part as shown on the drawing





- Lock the Braking Device with the attached spindle
- Give enough slack to hang the red rope extremity to the Platform

- Fasten the red rope extremity to the Platform using the Shackle
  - ➤ U curve side on the rope
  - ➤ Flat side on the main platform ring
- Secure the Shackle with the security pin attached to the bolt
- Stretch the rope between the Platform head and the Braking Device

THE PLATFORM IS NOW FULLY EQUIPPED AND READY TO USE

Hatch platform positioning

- Raise the head of the Platform using the rope's loop head
- Pull on the rope in order to tense the slack between the Platform and the Braking Device
- Put the Platform in the hatch progressively and continue to pull on the rope
- Before unlocking the Platform, check if the arms are in correct position by pushing on the plate, which must be able to drop by 20 mm

WARNING

Due to the insufficient clearance between the ground and the Platform, **when taxi and take off, it is forbidden** to have the Platform engaged in the hatch

Select opening system position

Set up the opening system in your desired mode

Automatic	Manual
➤ Platform opens itself at the end of its descent	➤ Platform must be opened by an operator on the ground
➤ Keep the safety latch down and rotate the selector counterclockwise **(CCW)**	➤ Keep the latch down and rotate the selector clockwise **(CW)**
	➤ The Platform is opened on the ground by pressing both hands flat on each side of the plate

ON THE GROUND IN CASE OF FAILURE OR EMERGENCY
THE MANUAL PROCEDURE CAN STILL BE USED
ENSURE THE LOCKING SYSTEM IS IN THE UNLOCKED POSITION

- Check clearance zone for the unwinding of the rope (bag, route of the rope…)
- Nobody must be seated on the rope or have it around their legs

Begin platform descent

The braking of the Platform descent is done by pulling out the brake handle of the device

Pushing the handle on the device will resulting a quasi free fall of the platform

- We recommend a dropping speed of about 2,5 m/s (8 ft/s) This includes human reaction time (1/2 s) to initiate the brake release to trigger deployment

For manual opening	For automatic opening
Push gently on the handle to lower the platform completely at required speed.	Push gently on the handle to lower the platform at required speed. Near the end of the rope (2 m) or at the length signified by a colored mark on the rope release the handle quickly and completely. The platform will be instantly braked and the opening will be triggered by the shock of the deceleration.

Landing the platform

Landing the platform could be done:

- On obstacle with a maximum height of 30 cm / 1ft
- On a slope < 10 %

The Braking Device **is not** designed to withstand the nominal load (1 500 kg / 3 306 lbs):

WHEN THE PLATFORM IS LANDED, THE ROPE MUST BE REMOVED FROM THE BRAKING DEVICE

As the Platform lands, the rope becomes slack

- Remove the security spindle of the braking pulley and open it
- Remove the rope of the flat part of the pulley
- Open the Delta Carbiner
- Remove the Braking Device of the BK Hook
- Put back the Guiding Ring
- Thread the rope in the Guiding Ring
- Fix the Guiding Ring by hanging the rear left strap on its dedicated stowage point

The system is now ready to allow take off of the Platform

- In case of emergency take off, it is possible to only remove the rope from the Braking Device; and then remove the device later on
- On board operator must check visually the Guiding Ring during the flight
- The length of the rope can vary by its 10 % elasticity
- The Platform has been qualified with a static load of 4 500 kg (9 900 lbs) which corresponds to a maximum acceleration coefficient of 2G with a nominal load of 1 500 kg
- Take off vertically respecting flight limitations

STORAGE PROCEDURE

After sea condition use, the Platform must be washed with clear water and dry in ventilated and dark area.

Don't forget that the polymer fibre used for nets and rope are sensitive to ultraviolet radiation and humidity. Therefore for its storage, avoid long exposure to the sun or humidity.

Fold the Platform

Use the Velcro ribbons to maintain in unlock position the 5 ratchets between the arms and the cross base.

Lift the arms in vertical position

Check clearance of the upper Cable fixation. Cable fixations may hamper the arms folding.

Push on the plate.

Put the 3 head's ratchets down.

Rotate the locking device clockwise to lock the head.

Storage condition in the bag

Storage of the Platform must be done in the following manner:

- Platform foot on the green side
- Red ring on the red side

In vertical position, the Platform must always be stored upside to avoid damaging the head and the locking device.

SAFETY MEASURES

With its pentagon shape, the Platform is designed to avoid gyratory movements.
Despite this design, in case of gyration, the helicopter should reduce its speed under 60 km/h (30 kts).

No TAXI
No Take OFF
No Helicopter Landing
with platform engaged in the hatch !!

Landing the Platform could be done:

- On obstacle with a maximal height of 30 cm /1 ft
- On a slope less inclined than 10 %

Crew chief

- The Braking Device must be removed from the BK10.8 Hook before any flight or take off with empty or loaded Platform
- During the flight, the rope must not touch hatch edges or other metal parts of the aircraft
- In such case, land the Platform and check any presence of shred on the rope before any further use
- Secure all the straps by winding them in their sleeves

Onboard Platform passengers

- Onboard passengers must be secured with Safety Belts
- Onboard passengers must be sited, and must stand up during landing
- Loads on the platform must be correctly and equally balanced
- Moving on the Platform must be avoided as much as possible.

In aquatic use

- Divers must be equipped with their own floatability devices
- After usage in seawater conditions, the Platform must be washed with clear water and dried in ventilated and dark area

CHECK LIST BEFORE USE

BEFORE ANY CYCLE, THE FOLLOWING POINTS MUST BE CHECKED

Rope	• Unwind the rope and check the all length
	• Be particular cautions about:
	  • Shrinks or fraying specially near splices
	  • Presence of the metallic shields in the loops
	  • Knot specially during winding in the bag
	  • Presence of the flag pouch, the flag and the other accessories

Shackle	• Presence of the bolt security pin • No deformation, check the wear out
Platform	• Correct functioning of the Platform opening and unlocking of all the arms • Free rotation of the wheel and upsliding of the plate • Correct position of the fasteners by controlling the anti rotation marks • Deformation or crack on the mast, the arms and the cross-base • Signs of rupture of the cables • Deformation on the eyelet and cable fixations • Shred on nets, specially on the links with the arms
Safety Belts	• Shred on the Safety Belts • Deformation of the adjustment rings and the carbiner • The belts are folded without any knot and without hampering the platform opening
Guiding ring	• Shred on the straps and no deformation on the adjustment rings • Neat surface quality for the rope rubbing zone
BK10.8 Hook	• Crack or deformation on the hook or on its hub

MAINTENANCE BY THE OPERATORS

The Platform has a life time of 15 years or 3 000 cycles.
These 15 years (3 000 cycles) are divided in 3 phases, each phase is 5 years long (or 1 000 cycles), between each phase a general inspection is made at the manufacturer factory.

15 years
2 general inspections

The following checklist must be done prior to store the Platform

Rope

- Cleanliness and lack of fraying or shrinks (specially near splices) and lack of cut
- No knot, specially during the winding in the bag
- Must be dried in dark and ventilated place
- Check loops shields state

Safety Belts

- Cleanliness and lack of any fraying on the belts
- No deformation of the adjustment rings and the carbiner
- The belts are folded without any knot
- The belts must be dried (dark and ventilated place) before being fold

Platform nets

- The net should be replaced if 3 or more stitches are damaged, or 1 damaged stitch at the arm connection
- Cleanliness and lack of any fraying on the nets
- The nets must dried (dark and ventilated place) before being fold in the Platform

Braking Device

- Make sure the grooves are not bent or damaged by the rope
- Make sure the fixed pulley does not have any play
- Make sure the cam pulley does not have any lateral play
- Neat surface at the rope rubbing zones

Platform structure

- Correct functioning of the platform opening and unlocking of all the arms
- Free rotation of the wheel and sliding up and down of the plate
- Correct position of the fasteners by controlling the anti rotation marks
- Check the arms, head, and mast lack of impact or bending
- Check if arms don't have any rotation play
- Functioning of the arms locking ratchets (with their springs)
- Signs of rupture of the cables
- No deformation on the eyelets and cable fixations

Shackle

- No deformation
- Presence of the bolt security pin

Guiding ring

- Cleanliness and lack of any fraying on the straps
- Neat surface at the rope rubbing zone

BK10.8 hook

- No crack on the hook or on its hub

A “Maintenance Manual” is also delivered with the Platform.

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Rev 1 - December 2006

ESCAPE International

MAINTENANCE MANUAL

Escape Platform
Type A1 / A2

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Life time

The entire system has a life time of 15 years (or 3 000 cycles).

These 15 years are divided in 3 phases, each phase is 5 years long (1 000 cycles), and between each phase a general inspection is made at the manufacturer factory.

15 years / 3 000 cycles
2 general inspections

For each general inspection, the following parts are replaced:

- Rope
- Safety Belts
- Platform Nets
- Braking system
- Platform axles and cables

Monthly Check List

Rope

- Cleanliness and lack of fraying or shrinks on the rope (in particular near splices) and lack of cut strands
- No knot, in particular during the winding in the bag
- Dry (must be dried in dark and ventilated place)
- Check loops shields state

Safety Belts

- Cleanliness and lack of any fraying on the belts
- No deformation of the adjustment rings and the carbiner
- The belts are folded without any knot and will not hamper Platform opening
- The belts must be dried (dark and ventilated place) before being fold

Platform Nets

- Less than 3 damaged seams on the rug or 1 damaged seam on the arm connection
- Cleanliness and lack of any fraying on the nets
- The nets must dried (dark and ventilated place) before being fold

Braking Device

- Make sure the grooves are not bent or damaged by the rope
- Make sure the fixed pulley does not have any play
- Make sure the cam pulley does not have any lateral play
- Neat surface quality for the rope rubbing zones

Platform structure

- Correct functioning of the Platform opening and unlocking of all the arms after action on the platform head
- Free rotation of the wheel and vertical translation of the plate
- Correct blocking of the fasteners by controlling of the anti rotation marks
- Check the arms, head, and mast lack of impact or bending
- Check arms rotation play
- Travel and stiffness of the spring (manual pressure testing)
- Operability of the arms locking ratchets (with their springs)
- No start rupture on the cables
- No deformation on the eyelets and cables setting

Shackle

- No deformation
- Presence of the bolt security pin

Guiding ring

- Cleanliness and lack of any fraying on the straps
- Neat surface quality on the rope rubbing zone

Needed Tools

Chemical

- LOCTITE 7063 Degreaser
- LOCTITE 7649 Activator
- LOCTITE 243 Threadlocking

Mechanical

- Torque Wrench (5 Nm – 30 Nm)
- Ratchet Socket Wrench
- M6 Hex Socket Key
- M8 Hex Socket Key
- M10 Hex Socket Key
- Some sheets (~2 mm) of soft metal (Copper, bronze…)
- M6 Hex Screws
- A size 17 open end wrench for Torque Wrench

The following description concerns the two entire systems with the following ordering number:

- Rescue Platform ESCAPE Standard
  Ref. 7N031775
- Rescue Platform ESCAPE Fireproof
  Ref. 7N038354

General recommendation

1 - Locking system (selector)

The locking head is a complex assembly.
It must considered as an inseparable assembly.

Only visual and operative check can be done by operator or customer.

Any intervention or replacement of this part needs a return to manufacturer factory (by your distributor).

The fixation of the locking head on the mast needs special equipments and skills.

DON'T TRY TO SEPARATE IT FROM THE MAST

2 – Fasteners assembly

For all screwed assembly the following procedure must be respected, it prevents these assemblies to be weakened by vibrations:

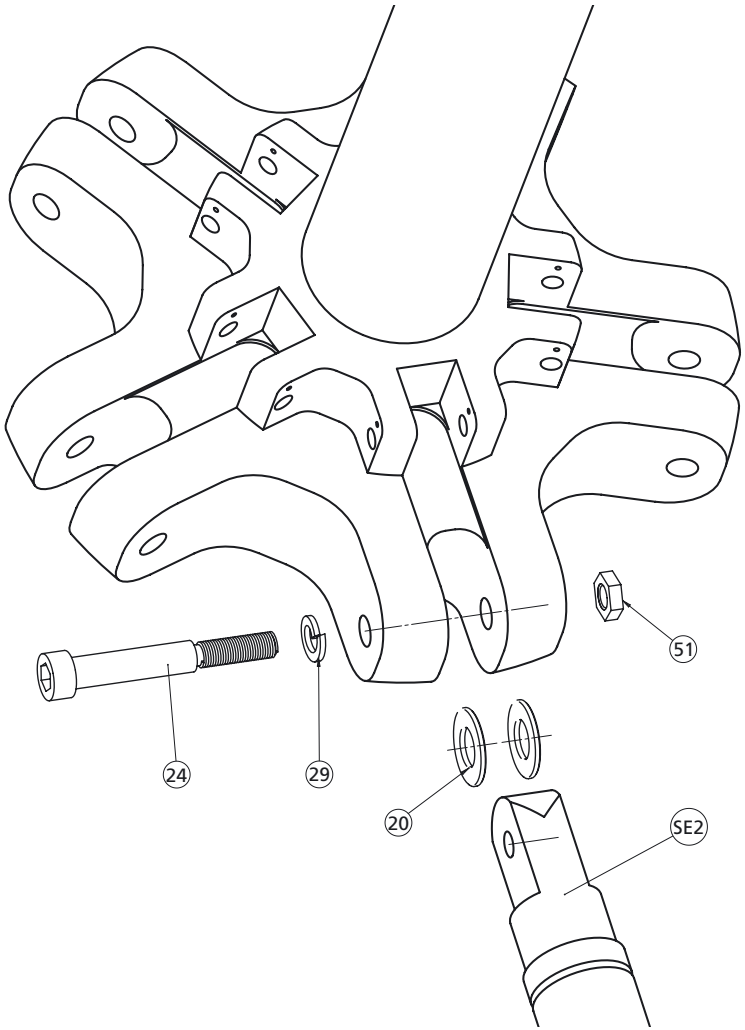
1. Remove grease from the 2 bolt parts (screw and nut) with LOCTITE 7063 degreaser
2. Put LOCTITE 7649 spray activator on the 2 parts (screw and nuts)
3. Put a complete turn of thread stop LOCTITE 243 on the third thread of the screw
4. Tighten at the correct torque:

Material / Material	Screw	Screw tightening torque
Stainless / Aluminium	M6	5 Nm
Stainless / Stainless	M6	8 Nm
Stainless / Aluminium	M8	9 Nm
Stainless / Stainless	M8	19 Nm
Stainless / Stainless	M10	30 Nm

6. Mark all screwed bolt with a trace of red paint (unscrew mark)

Arm

Mark	Reference	Description
SE2	7N031761	Arm
28	0N031745	Ratchet Stop
11	0N031741	Central Support
24	0N031756	Arm Axle - M10/ Ø 12x50
29	0V031773	Grower Slice Ø 12
20	0N031752	PTFE Slice
51	0V032715	Flat Nut H,M10
31	0V035121	Screw CHc, M8x35
56	0V032711	Grower Slice Ø 8
75	0N035131	Cable Axle - M8/ Ø 10x16 - 16,5
50	0V031772	Grower Slice - Ø 10
21	0N031753	Long Cable Axle - M8/ Ø 10x16
64	0V031771	Flat Nut H,M8
22	0N031754	Peripheral Cable Axle - M8/ Ø 10x20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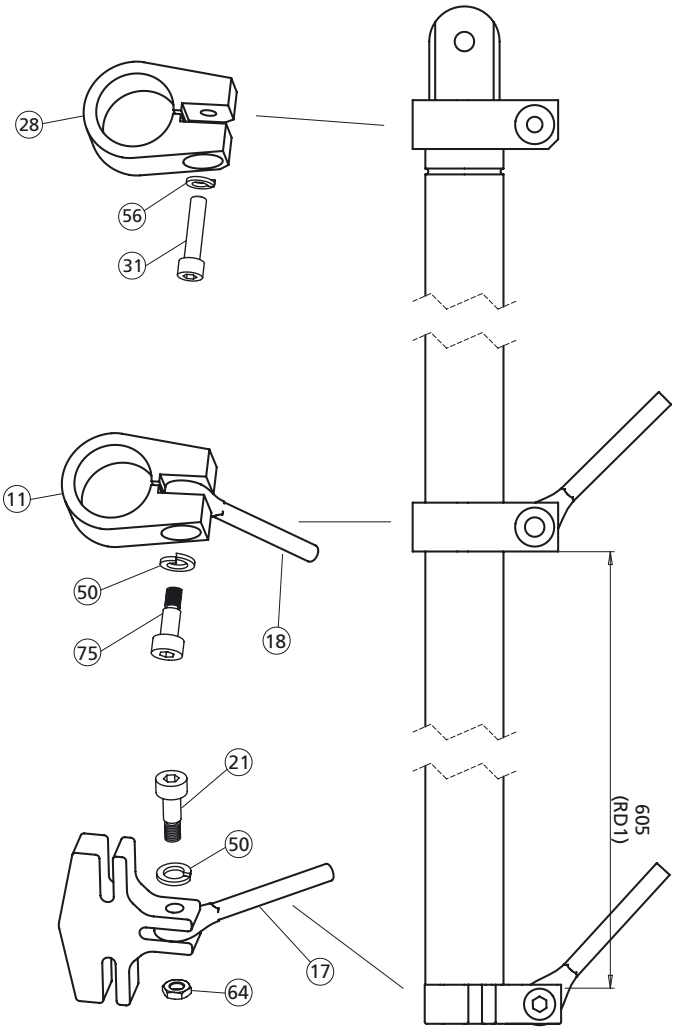
SE2


28
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50
75
18
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64
17
605
(RD1)

ARM REPLACEMENT

To allow easier disassembly of the Ratchet Stop and Central Support you can use a sheet of soft metal (copper, bronze...) as a wedge and a screw to widen the support diameter.

WITH NEW PARTS, THE PAINT CAN REDUCE THE DIAMETER OF HOLES. BORE SLIGHTLY THESE HOLES WITH A REAMER CAN HELP THEIR ASSEMBLIES.

1 – Disassembly

1. Unscrew the Short Cable$_{(18)}$
2. Unscrew the Long Cable$_{(17)}$
3. Unscrew the two Peripheral Cables
4. Unscrew the Ratchet Stop$_{(28)}$
5. Insert a wedge in the Ratchet Stop
6. Unscrew the Central Support$_{(11)}$
7. Insert a wedge in the Central Support
8. Pull out the Arm through the Nets and remove the old Central Support and Ratchet Stop

2 – Assembly

For an Arm replacement, only the nets and the cables can be re-used, all the fasteners sets and axles must be new ones.

1. Insert a wedge in the Central Support
2. Insert a wedge in the Ratchet Stop
3. Pass the new Arm in the 3 first loops of the 2 Nets
4. Position the Central Support on the Arm
5. Pass the Arm in the last 4 loops of the 2 nets and reposition the Central Support on the Arm
6. Position the Ratchet Stop on the Arm

7. Fasten the Arm on the Cross Base with the following assembly (30 Nm Torque on nut)

DON'T FORGET THE LOCTITE THREAD LOCKING!

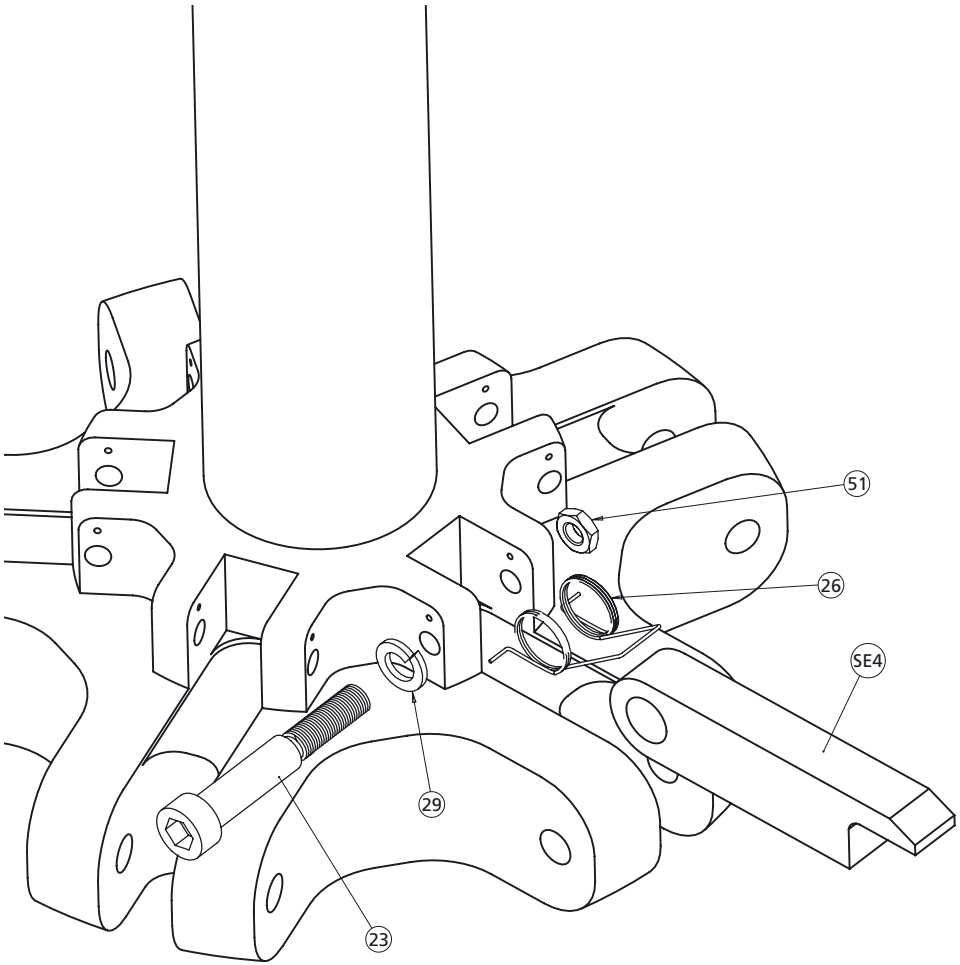
8. On the Ratchet Stop, remove the wedge and screw its fastening set (9 Nm + Loctite)
9. Position the Central Support at 605 mm from the Extremity Support of the Arm

The 605 mm have to be measured from the outer side of the Central Support to the inner side of the Extremity Support

10. Remove the edge of the Central Support and screw on it the Short Cable (9 Nm + Loctite)
11. Screw the Long Cable on the Extremity Support of the Arm (19 Nm on Flat $Nut_{(64)}$ + Loctite)
12. Screw the Peripheral Cables and the Nets Corner Eyelet on the Extremity Support of the Arm (19 Nm on Flat $Nut_{(64)}$ + Loctite)

Arms ratchets

Mark	Reference	Description
SE4	7N033297	Ratchet
46	0N033398	Mast Strap Ratchet Axle
23	0N031755	Ratchet Axle - M10/ Ø 12x40
26	0V031760	Ratchet Spring
29	0V031773	Grower Slice - Ø 12
51	0V032715	Flat Nut H,M10


51
26
SE4
29
23

1 – Ratchet replacement

CAUTION!

THE AXLE USED AS A SUPPORT FOR THE MAST STRAP EXTREMITY IS LONGER THAN THE 4 OTHERS

1. Unscrew the Ratchet Axle$_{(23/46)}$ and extract its fastener set$_{(64/50)}$ and spring
2. Insert the new Ratchet Spring in the holes in the position shown on the picture

3. Begin to place the new ratchet from up to bottom the Ratchet beak first

4. Present the Grower Slice$_{(29)}$ in front of the Axle hole and screw the new Ratchet Axle$_{(23/46)}$ Otherwise there should be no enough clearance between the Grower Slice and the Axle Head

5. Finalize the assembly by screwing the Flat Nut$_{(51)}$ on the Ratchet Axle (30 Nm on Flat Nut$_{(51)}$ + Loctite)

One of these Axles is used as support of the Mast Strap.
This axle is longer than the others. It can be placed on all Ratchets place, between a Grower Slice and the Cross Base.

2 – Mast Straps (Docking Straps)

Mark	Reference	Description
41 - PO	0N032283	Mast Strap (Standard TypeA 1)
41 - AR	0N034248	Aramid Mast Strap (Fireproof Type A2)
48 - PO	0N034250	Velcro Strap (Standard Type A1)
48 - AR	0N034249	Aramid Velcro Strap (Fireproof Type A2)

The two Mast Strap Extremities are different.
They can be distinguished by their angles.
On the left of the picture the **60°** extremity
is the **Cross Base side**,
on the right the **90°** extremity is the **Head side**.

1 – Long Cable

Mark	Reference	Qty	Description
17	0N031749	1	Long Cable - LEA 1794
21	0N031753	2	Long Cable Axle – M8/ Ø 10x16
50	0V031772	2	Grower Slice - Ø 10
64	0V031771	2	Flat Nut H,M8

LONG CABLE REPLACEMENT

1. Unscrew the Long Cable Axle$_{(21)}$ on the Mast Head
2. Unscrew the Long Cable Axle$_{(21)}$ on the extremity of the Arm
3. Remove the Long Cable, $_{(17)}$ all the Axles and Screws sets
4. Screw the new Cable with a new Axle, Grower Slice$_{(50)}$ and Flat Nut$_{(64)}$ on the Head mast upper support (19 Nm on Flat Nut$_{(64)}$ + Loctite)
5. Screw the other end of the Long Cable on the Arm extremity with a new Axle, Grower Slice and Flat Nut (19 Nm on Flat Nut$_{(64)}$ + Loctite)

2 – Short Cable

CAUTION!

THE AXLE USED AS A SUPPORT FOR THE MAST STRAP EXTREMITY IS LONGER THAN THE 4 OTHERS

In case of Mast Strap and Short Cable replacement the "Mast Strap Short Cable Axle M8 Ø 10x20" must be used instead of the "Head Side Short Cable Axle M8 Ø 10x16"(21)

On the head for the 5 Short Cables must be present: four(21) Axles and one Axle for the Mast Strap support.

Mark	Reference	Qty	Description
18	0N031750	1	Short Cable - LEA 1362
75	0N035131	1	Arm Side Short Cable Axle - M8/ Ø 10x16,5
21	0N031753	1	Head Side Short Cable Axle - M8/ Ø 10x16
22	0N031754	1	Mast Strap Short Cable Axle - M8/ Ø 10x20
50	0V031772	1	Grower Slice - Ø 10
64	0V031771	1	Flat Nut H,M8

SHORT CABLE REPLACEMENT

The 2 axles are different, the upper Axle (on the Mast head) is shorter.

1. Unscrew the Short Cable Axle$_{(21)}$ on the Mast head
2. Unscrew the Short Cable axle$_{(75)}$ on the Arm Central Support
3. Remove the Short Cable, $_{(18)}$ all the Axles and Screws Sets
4. Screw on the Mast Head lower support, the new Short Cable with a short Axle, $_{(21)}$ Grower Slice$_{(50)}$ and Flat Nut$_{(64)}$ (19 Nm on Flat Nut$_{(64)}$ + Loctite)
5. Screw the other end of the Short Cable on the Arm Central Support with a Long Axle$_{(75)}$ and Grower Slice (9 Nm + Loctite)

3 – Peripheral Cable

Mark	Reference	Qty	Description
19	0N031751	1	Peripheral Cable - LEA 1637
22	0N031754	2	Peripheral Cable Axle - M8/ Ø 10x20
64	0V031771	2	Flat Nut H,M8

PERIPHERAL CABLE REPLACEMENT

1. Unscrew the Peripheral Cable Axle on the two Arms extremities
2. Remove the Peripheral Cable from the little loops of the net
3. Pass the new Peripheral Cable through the little loops of the net
4. Screw the Peripheral Cable on the Arms extremities with their Axles, Nets Eyelets and Flat Nuts$_{(64)}$ (19 Nm on Flat Nut$_{(64)}$ + Loctite)

NO Grower Slice are required,
they are replaced by the Nets Eyelets

Mark	Reference	Description
13 - PO	3N031743	Polyamide Net (Standard Type A1)
13 - AR	3N033047	Aramid Net (Fireproof Type A2)

1 – Net replacement

The replacement of a Net requires the disassembly of the two surrounding Arms as described on the «Arm replacement» chapter.

In this case, the net only can be replaced, all the Axles or screws sets can be re-used if they look in a correct state.

ARMS DISASSEMBLY

1. Unscrew the two Short Cables$_{(18)}$
2. Unscrew the two Long Cables$_{(17)}$
3. Unscrew the three Peripheral Cables
4. Remove the Peripheral Cable from the little loops of the old net
5. Unscrew the two Ratchet Stops$_{(28)}$
6. Insert a wedge in each Ratchet Stop
7. Unscrew the two Central Supports$_{(11)}$

8. Insert a wedge in each Central Support
9. Pull out the arms through the nets and remove the Central Support and Ratchet Stop

The old Net is now free to be removed

NET REPLACEMENT AND ARMS REASSEMBLY

1. Place the new Net between the loops of the two surrounding Nets
2. Pass the Peripheral Cable$_{(18)}$ through the little loops of the Net
3. Pass the Arms in the 3 first loops each side of the Net
4. Position the Central Support$_{(11)}$ on the Arm
5. Pass the Arms in the last 4 loops of the nets and reposition the Central Support on the Arms
6. Position the two Ratchets Stops$_{(28)}$ on the Arms

7. Fasten the two Arms on the Cross Base with the following assembly (30 Nm on Flat Nut (51) + Loctite)

8. On the Ratchet Stops$_{(28)}$ remove the wedges and screw their fastening sets (9 Nm + Loctite)
9. Position the Central Support at 605 mm from the Extremity Support of the Arms

The 605 mm have to be measured from the outer side of the Central Support to the inner side of the Extremity Support

10. Remove the edges of the Central Support and screw on them the Short Cables (9 Nm + Loctite)
11. Screw the Long Cables on the Extremity Support of the Arms (19 Nm on Flat Nut$_{(64)}$ + Loctite)
12. Screw the Peripheral Cables and the Nets Corner Eyelets on the Extremity Support of the Arms (19 Nm on Flat Nut$_{(64)}$ + Loctite)

Main Lifting Ring

Reference	Description
0N031767	Main Lifting Ring M24
0V032378	Pin Ø 5X40

1. Remove the Pin
2. Unscrew the old Main Lifting Ring
3. Screw the new Main Lifting Ring
4. Insert a new Pin
5. Grind the 2 edges of the Pin to avoid operator hurts when moving the platform

Shackle

Reference	Description
7N035115	Shackle 14 500 + Safety Spindle
0V036947	Safety Spindle Ø 6

Shackle replacement

In case of crack or deformation,
the entire shackle must be replaced

BK Hook

Reference	Description
7N035116	BK Hook 10-8

Rope

There is 2 different versions of the rope (25 m)

Reference	Description
0N035429	Polyamide Rope (Standard Type A1)
0N033770	Aramid Rope (Fireproof Type A2)

Safety Belts

There is 2 different versions of safety belts

Reference	Description
0N032282	Polyamide Safety Belt (Lite FliteType A1)
0N033048	Aramid Safety Belt (Lite Flite Type A2)

Platform and Rope Bag

Reference	Description
0N032281	Rope Bag
0N0317698	Platform Bag

Braking Device

Reference	Description
7N031907	Braking Device
0V035055	Safety Spindle Ø 16x80
0V035135	Delta Ring

Guiding Ring

The Guiding Ring and its straps and sleeves
are a complete package with the following reference

Reference	Description
7N032539	Guiding Ring (Puma Family)

GENERAL INSPECTION PROCEDURE

Platform returns to manufacturer for general inspection (every 5 years or 1 000 cycles).

During general inspection made by the manufacturer, the following operations will be done:

Platform

- Replacement of the 5 nets
- Replacement of the 15 Cables (long, short, peripheral)
- Replacement of the Cable Axles (Bolts/Nuts)
- Replacement of the 10 Safety Belts
- Replacement of the locking Ratchets, if necessary
- Check of the Head, correct rotation and no cracks and corrosion
- Internal Mast check, no deformation, corrosion and cracks in particular on the welded parts
- Check of the Arms
- Check of the Cross Base

Shackle

- No deformation and cracks on the Shackle
- Check Safety Spindle on the Shackle

Guiding ring

- In case of wear or shred, replacement of straps
- Check and rectification of the metal surface in contact of the rope

Braking device

- Correct functioning check
- Check pulleys
- Will be rectified if defect is spotted

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TECHNICAL REPORT

DISTRIBUTOR / CUSTOMER NUMBER
COMPANY CUSTOMER
NAME CONTACT
PHONE NUMBER

131 rue Cardinet
75017 PARIS - FRANCE

Tel. : + 33 (0) 1 46 22 09 14
Fax : + 33 (0) 1 46 22 10 16

DATE	

PRODUCT NAME	
SERIAL NUMBER	
USE TYPE	
IN SERVICE / DATE	
LAST REPORT DATE	
CYCLES SINCE THE LAST REPORT	
TOTAL CYCLES	
GENERAL INSPECTION 1	
GENERAL INSPECTION 2	
GENERAL INSPECTION 3	

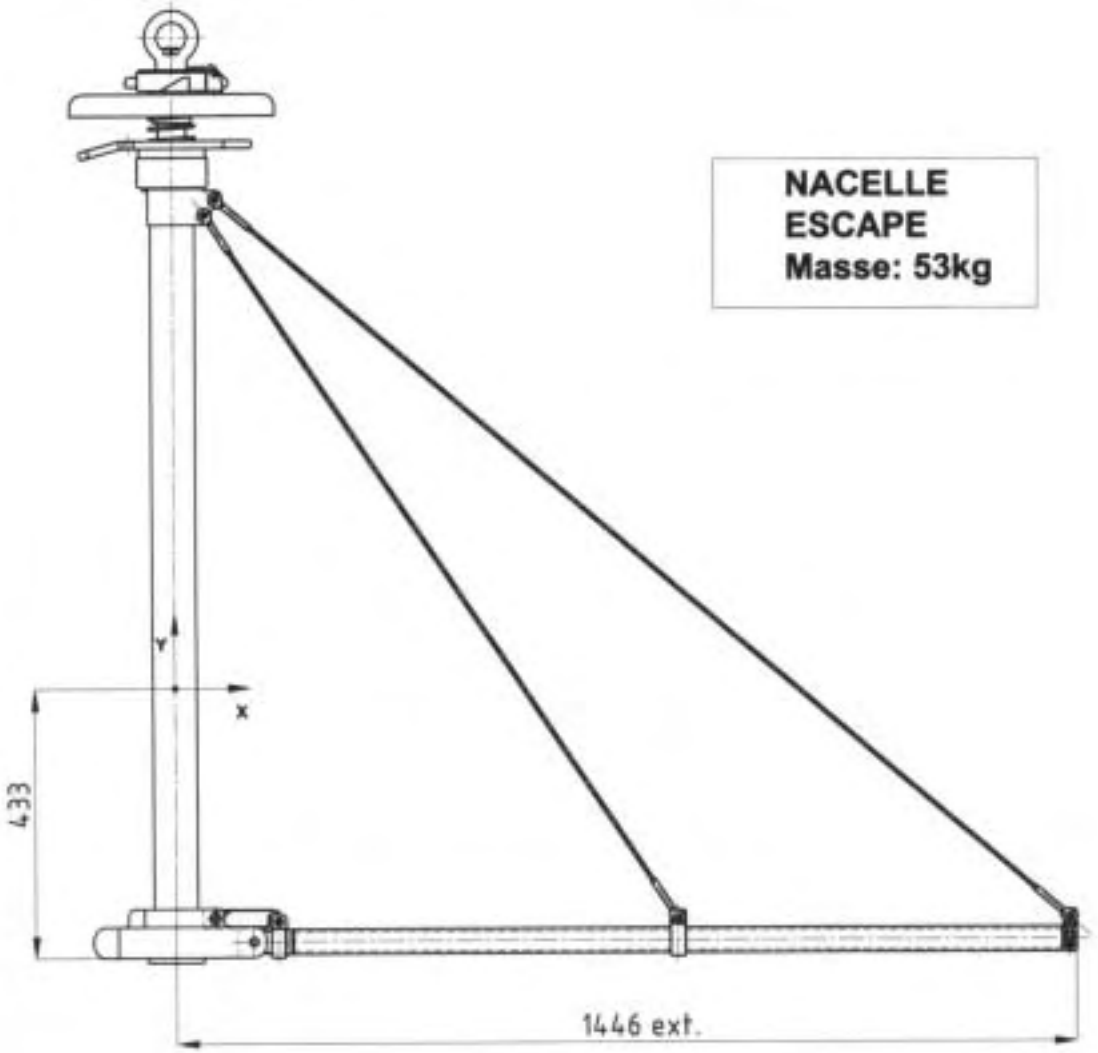
SPARE PARTS CHANGED SINCE THE LAST REPORT		
REFERENCE	DESIGNATION	QUANTITIES

COMMENTS : quality / use / improvements

DISTRIBUTOR Company stamp & signature

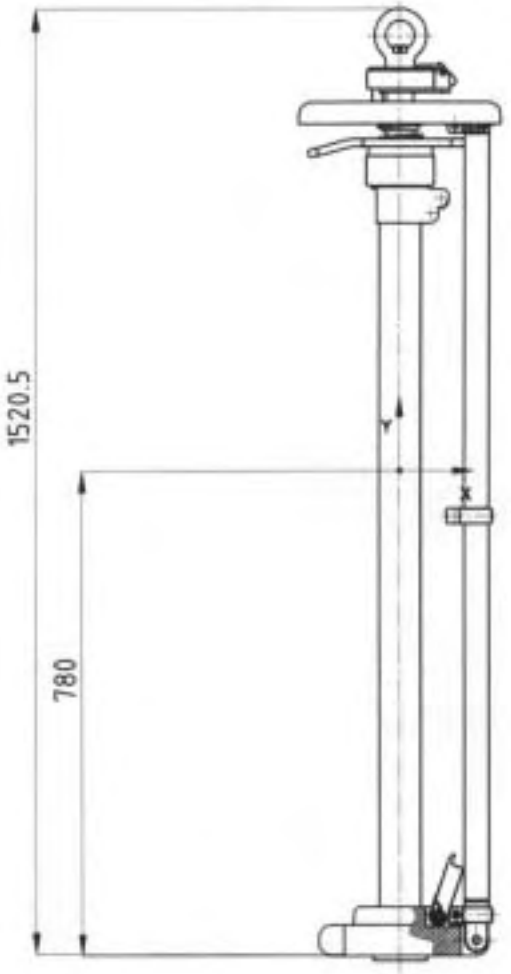
CUSTOMER Stamp & signature

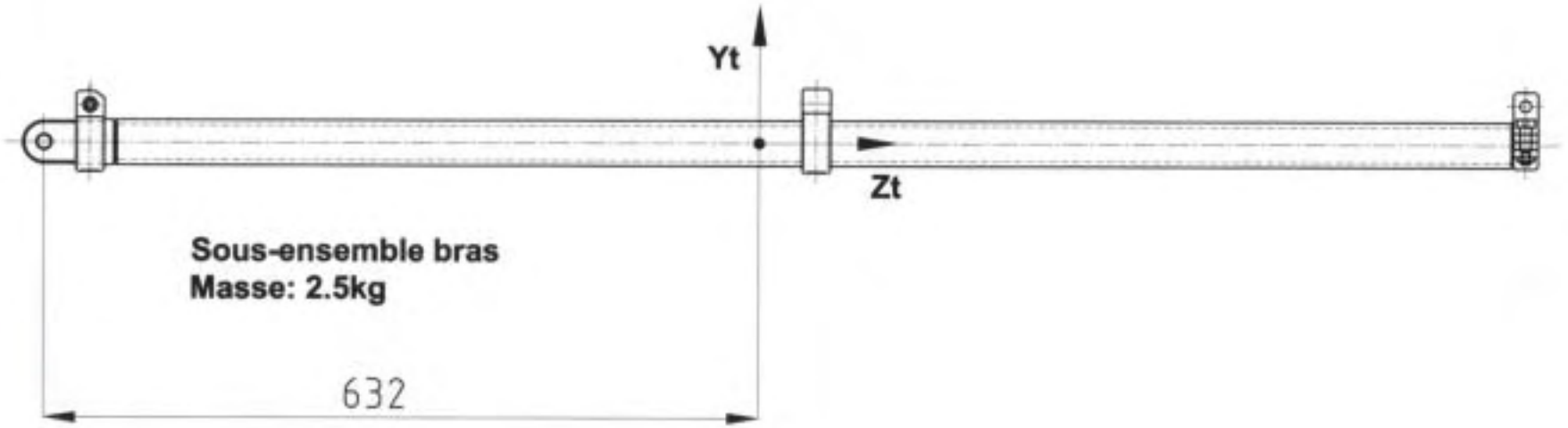
POSITION DEPLIEE



NACELLE
ESCAPE
Masse: 53kg

POSITION REFERMEE





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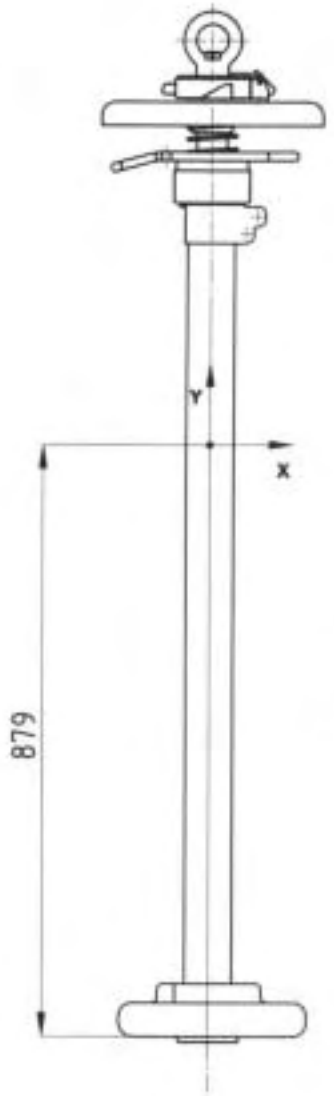
					Désignation / Designation		Code produit / Part number		Quantité / Quantity		Observations / Observations		Spécification / Specification
					Spécification / Specification		Fac. de conformité / Modify plan	-					
							Format / Size	A0	No. générique / Generic no.	ISO 2768 mK	Masse / Weight	-	
					INTERNATIONAL RISK								
					TRESSE METALLIQUE J.FORISSIER								
ID	MATURN	CREATION											
Vérifié / Verif.	Date / Date	Modification / Modification			Dessiné par / Drawn by		Vérifié par / Approved by						

Projet / Project	ESCAPE	
Désignation / Designation	CALCUL CDG SOUS-ENSEMBLE BRAS	
Code produit / Part number	-	
N° de plan / Drawing number	ESC-V3-SB-CDG2	Feuille / Sheet



Mat complet avec tête de verrouillage
Masse: 21kg

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Spécifications / Specifications					Plan de surveillance / Quality plan	-				
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									Désignation / Designation	CALCUL CDG ENSEMBLE MAT COMPLET
									Code produit / Part number	-
									N° de plan / Drawing number	ESC-V3-S8-CDG3
										Ind. / Ind.
										Feuille / Sheet
Nb	Matière	Désignation								
Index / Index	Visa / Date	Modifications / Modifications			Dessiné par / Drawn by	EJEDRON	Vérifié par / Approved by	EJEDGAAD		

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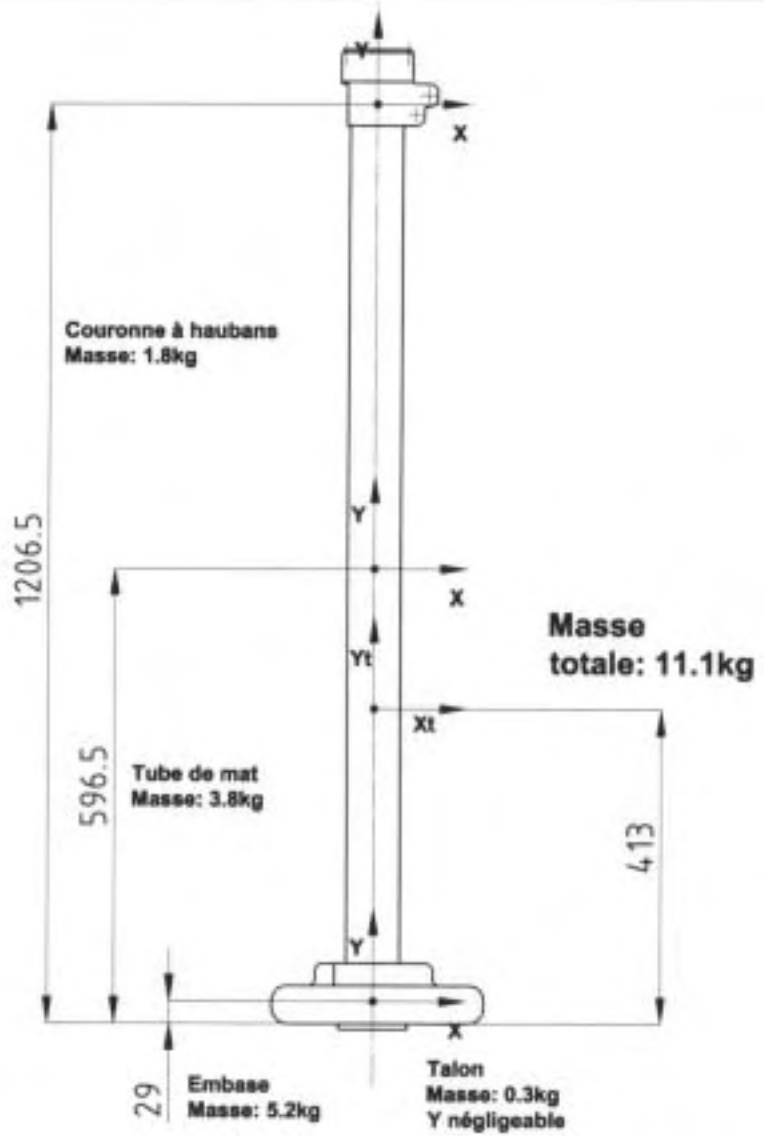
TRESSE METALLIQUE J.FORISSIER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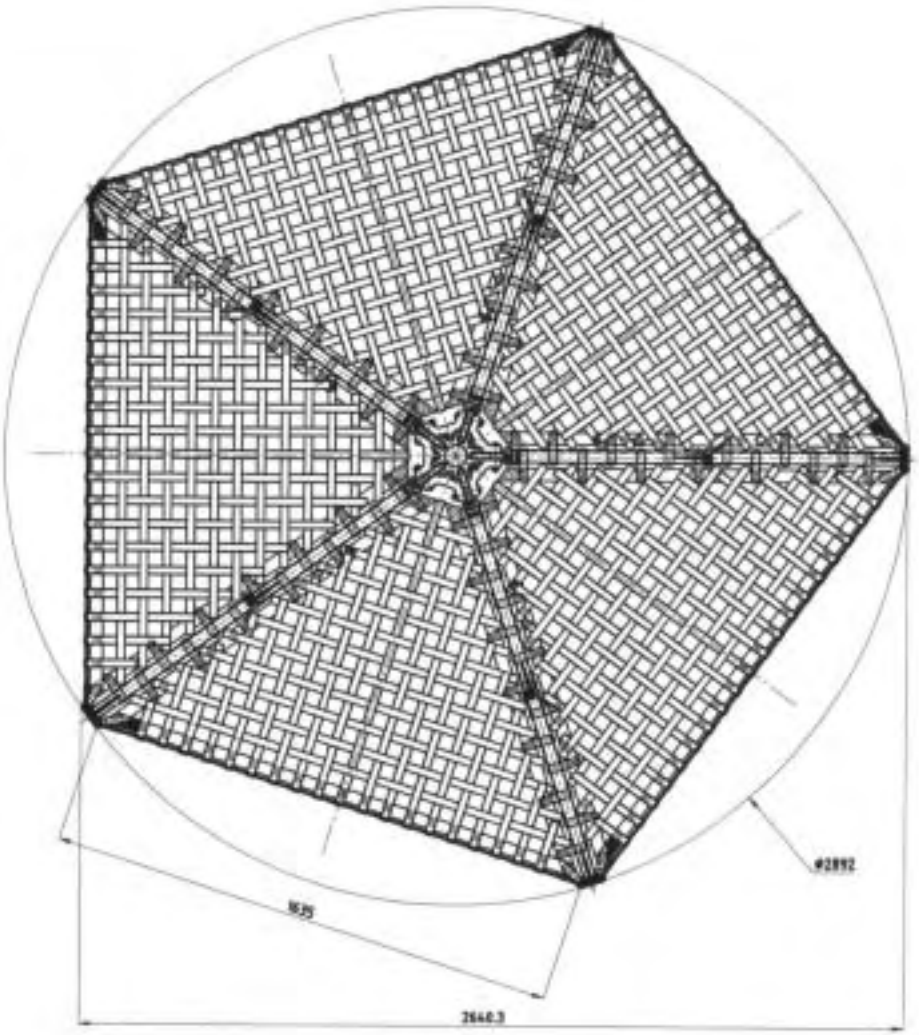
X
Couronne à haubans
Masse: 1.8kg
1206.5
Y
X
Yt
Masse
totale: 11.1kg
Xt
596.5
Tube de mat
Masse: 3.8kg
413
Y
X
29
Embase
Masse: 5.2kg
Talon
Masse: 0.3kg
Y négligeable

| | | |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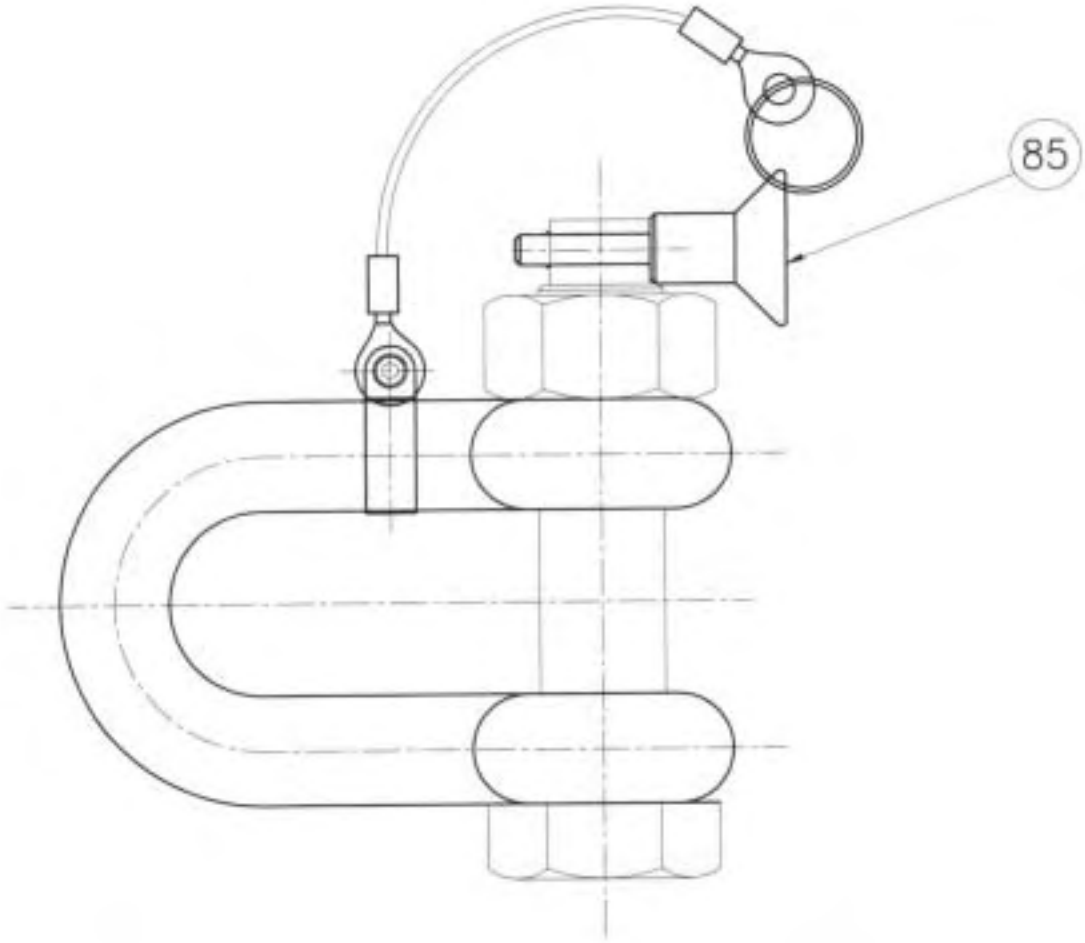

00	28/11/08	CREATION	D.ROBRON	DBO
Indice Rev:	Date Date:	Modification: Modification:	Etabli par: Issued by:	Vérifier par: Approuved by:

85	1	GOUPILLE D'ARRET AUTOBLOQUANTE Ø6	REF. 03184-230602				0V030847
Rep: Item:	Qté Qty:	Désignation: Designation:	Code produit: Part number:	Matière: Material:		Observation: Observation:	Spécification: Specification:
Spécification: Specification:			Plan de surveillance: Quality plan:			Projet: Project:	ESCAPE
		Echelle: Scale: 1/2	Format: Size: A3	Tol. générales: General tol.: ISO 2768 mK	Masse: Weight:	Désignation: Designation:	GOUPILLE AUTOBLOQUANTE Ø6 - PIECE DE RECHANGE

INTERNATIONAL WIRE

TRESSE METALLIQUE J.FORISSIER

BP n 42120 SAINT CHAMOND Cedex FRANCE

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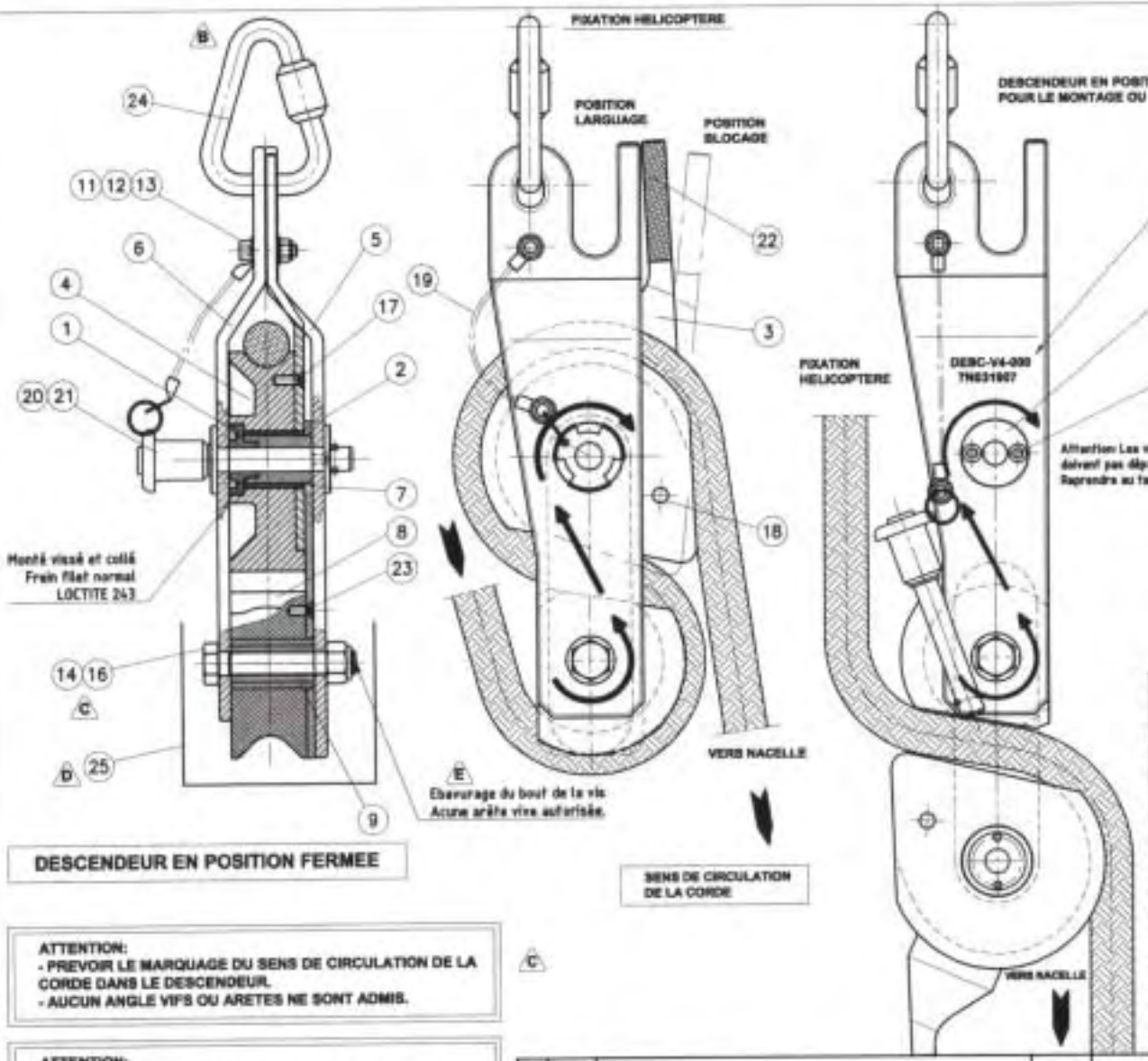
Code produit: Part number:

N° de plan: Drawing number: ESC-V3-SE8-PR

Ind. Rev. 00

Folio Sheet 1/1


FIXATION HELICOPTERE
POSITION LARGUAGE
POSITION BLOCAGE
DESCENDEUR EN POSITION OUVERTE
POUR LE MONTAGE OU LE DEMONTAGE DE LA CORDE
Marquage du numéro de fabrication donné par FORSSIER.
FIXATION HELICOPTERE
DESC-V4-000 7N031907
Attention: Les vis Fhc,M6 ne doivent pas dépasser le plat alu. Reprendre au taraudage si nécessaire.
Monté vissé et collé Frein filet normal LOCTITE 243
Ebarurage du bout de la vis. Acune arête vive autorisée.
VERS NACELLE
SENS DE CIRCULATION DE LA CORDE
VERS NACELLE

DESCENDEUR EN POSITION FERMEE

PROCEDURE DE MONTAGE DE TOUS LES ASSEMBLAGES VISSES:

1 - Dégraisser les deux parties (vis et écrous) avec le nettoyant 7063 - LOCTITE.
2 - Appliquer sur les deux parties (vis et écrous) l'activateur en spray - Ref. 7649 - LOCTITE.
3 - Apliquer au niveau du 3ème filet de la vis, un cordon d'un tour complet de frein filet normal - Ref. 243 - LOCTITE.
4 - Serrer au couple demandé.
Couple de serrage sur visserie M6 Inox / Inox: 8Nm.
Couple de serrage sur visserie M6 Inox / alu: 5Nm.
Couple de serrage sur visserie M8 Inox / Inox: 19Nm.
Couple de serrage sur visserie M8 Inox / Alu: 9Nm.
Couple de serrage sur visserie M10 Inox / Inox: 30Nm.
Couple de serrage sur visserie M16 Inox / Inox: 40Nm.
5 - Marquage de tous les éléments d'assemblages vissés par un trait de peinture rouge (Témoin de desserrage).

ATTENTION:
- PREVOIR LE MARQUAGE DU SENS DE CIRCULATION DE LA CORDE DANS LE DESCENDEUR.
- AUCUN ANGLE VIFS OU ARETES NE SONT ADMIS.

ATTENTION:
- Garantir le passage d'une pige Ø16.2 après assemblage du descendeur, dans le logement de la goupille d'arrêt (vérification du bon fonctionnement et montage avant livraison).
Autorisation de passer un alésoir.

24	1	SAC DE DESCENDEUR	-	-	-	0N030734
24	1	MAILLON RAPIDE DELTA - Ø14	Ø14 D	INOX A4	CMU 24KNg	0V035100
23	4	VIS FHC,M8x12	-	INOX A4	-	0V035112
22	1	GAINE RAYCHEM REF 105 S4 - Lg:110	-	-	-	0N0055344
21	1	GOUPILLE D'ARRET AUTOBLOQUANTE	Ø14 - 60	INOX	-	0V032000
20	1	GRILLET PORTE CLEF 4KN		INOX	-	0V034064
19	1	CABLE DE MAINTIEN AVEC GRILLET	DESC-V4-011	-	-	0N034042
17	4	VIS FHC,M6x16	-	INOX 316L	-	0V032270
16	1	ECROU AUTO-FREINE H,M16	-	INOX 316L	-	0V032022
15						
14	1	VIS H,M16x90	-	INOX 316L	-	0V032052
13	1	ECROU AUTO-FREINE H,M8	-	INOX 316L	-	0V032040
12	3	RONDELLE PLATE M8	-	INOX 316L	-	0V032047
11	1	VIS CHC M8x30	-	INOX 316L	-	0V032114
10	2	RONDELLE BIAISEE A BILLER	DESC-V4-010	-	-	0N030044
9	1	DEFLECTEUR INFERIEUR	DESC-V4-009	-	-	0N030043
8	1	GALET INFERIEUR	DESC-V4-008	-	-	0N031078
7	1	ENTRETOISE CENTRALE	DESC-V4-007	-	-	0N031081
6	1	PLAQUE AVANT	DESC-V4-006	-	-	0N031079
5	1	PLAQUE ARRIERE	DESC-V4-005	-	-	0N031080
4	1	GALET SUPERIEUR	DESC-V4-004	-	-	0N031077
3	1	FOURREE DE BLOCAGE	DESC-V4-003	-	-	0N031076
2	1	LEVIER ESCAMOTABLE	DESC-V4-002	-	-	0N030632
1	1	AXE/BOLT PILOTE	DESC-V4-001	-	-	0N030631

3	0181199	AJOUTE PROCEDURE ASSEMBLAGES VISSES + REPERE BOLT 150 (LAVA + VIS FHLM8x12	DRO	05
2	1284485	REPERE AU DEVANT PV03315 + AJOUTE REF.25 MAC DE DESCENDEUR	DRO	05
C	0481149	AJOUTER NOTE DE MONTAGE ET DE MARQUAGE - SUPPRIMER : LES ROMELLES PLATES REPERE 12	S.ROBSON	JM
B	1915284	MAILLON RAPIDE FORGE,DELTA	DRO	JM
A	0548054	POSITION DE MONTAGE DE CORDE	DRO	JM
00	1238483	CREATION	S.ROBSON	S.R

Tolérance Générale	Matière	Traitement de surface	Modifications	Modifié par / Approuvé par

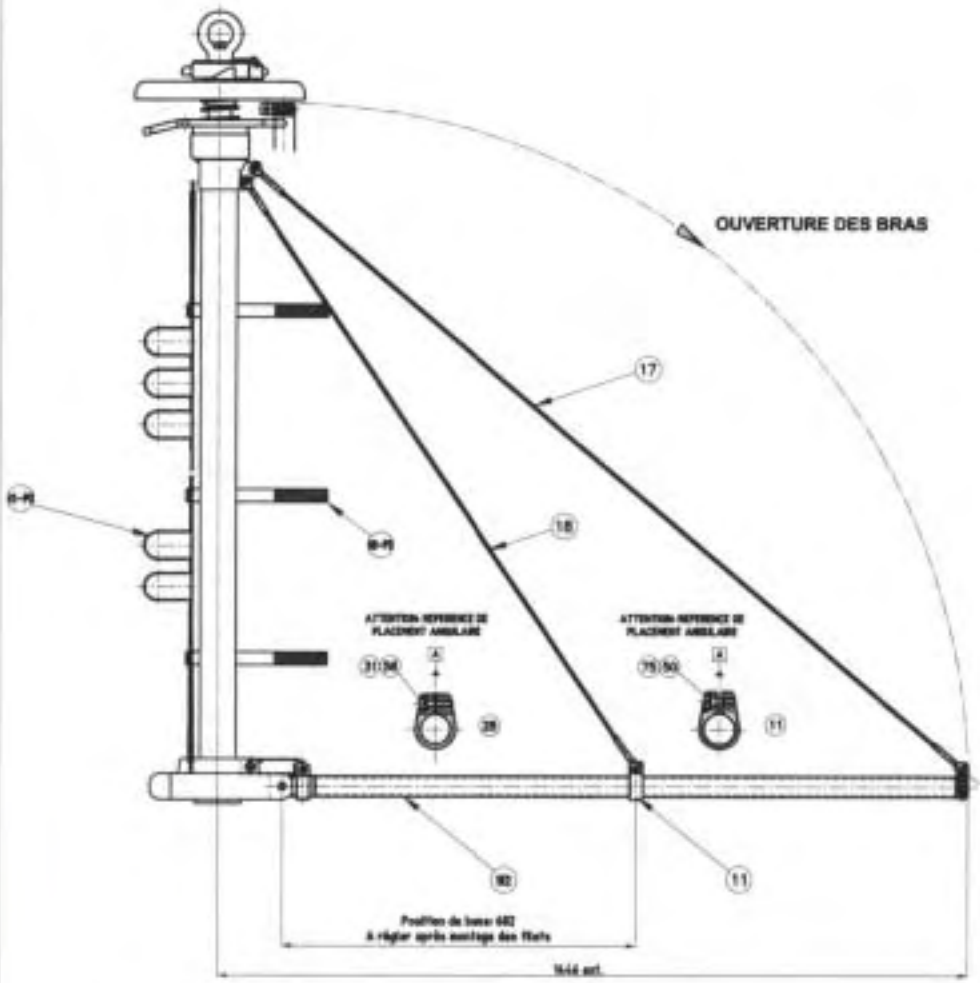
Projet	ESCAPE
Désignation	DESCENDEUR VERSION 4
Code produit	7N031907
N° ID plan	DESC-V4-000
Ind.	E
Feuille	1/1

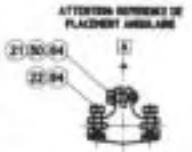
Echelle 1/2 | Format A2 | Poids 460 3788 mG | Masse

INTERNATIONAL ROPE
TRESSAGE METALLIQUE J.FORSSIER

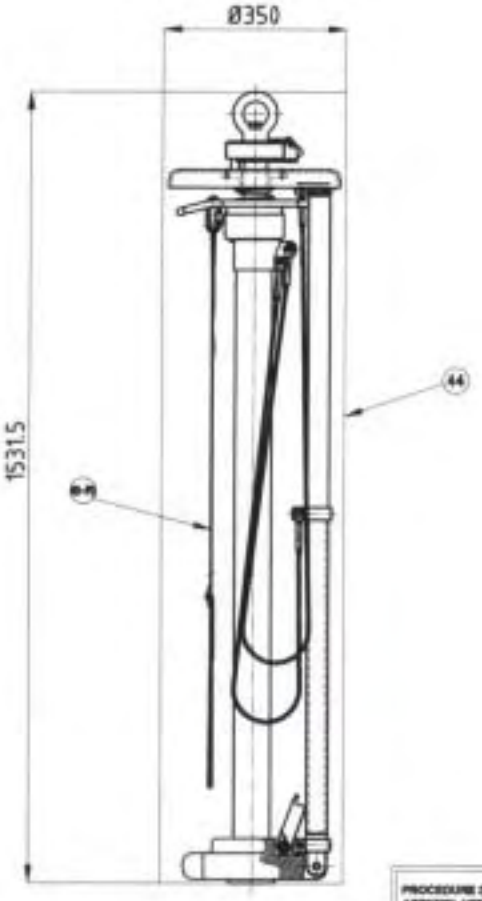
Droits de reproduction réservés

POSITION DEPLIEE





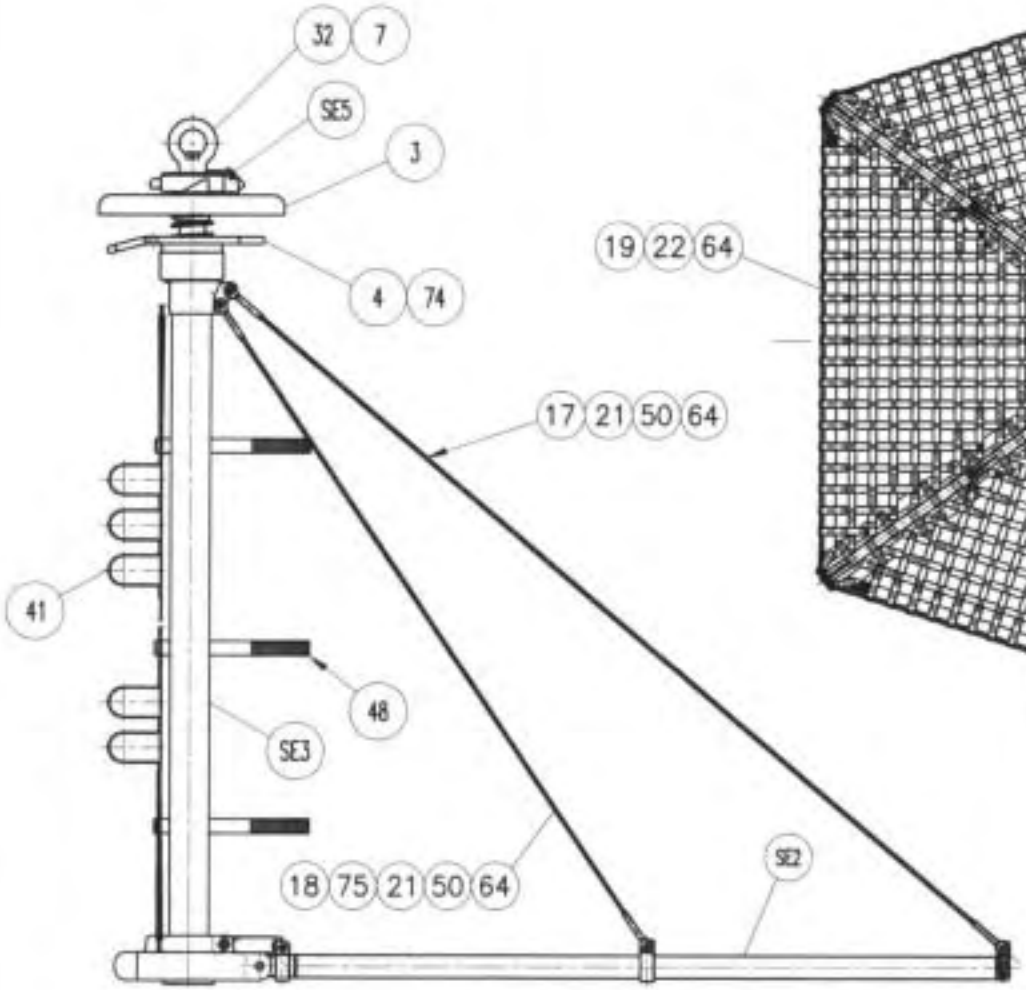
POSITION REFERMEE
CONDITION DE STOCKAGE

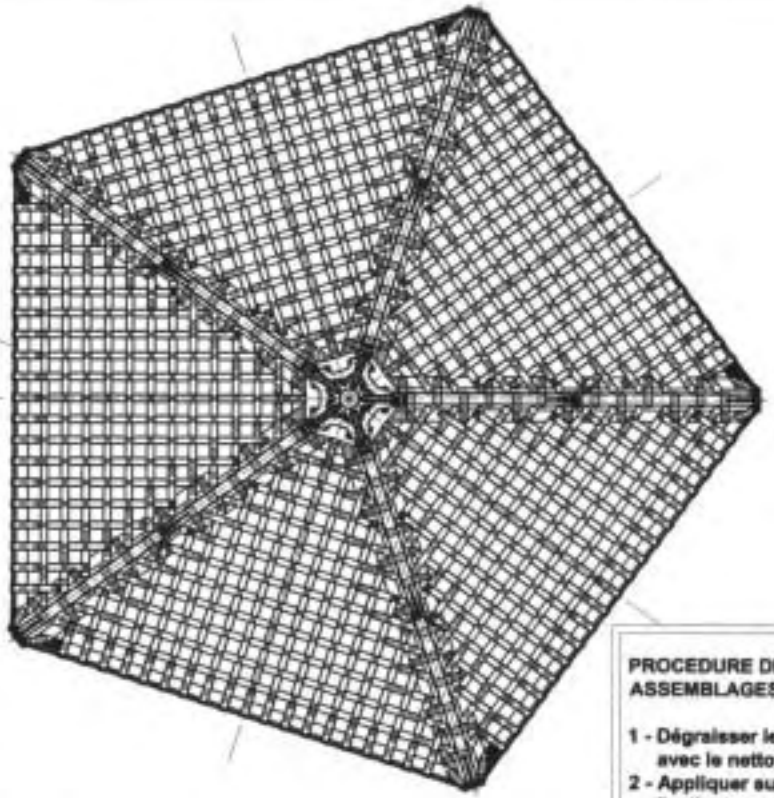


PROCEDURE DE MONTAGE DE TOUS LES ASSEMBLAGES VISES:

1 - Dégraisser les deux parties (vis et écrous) avec le nettoyant 7063 - LOCTITE.
2 - Appliquer sur les deux parties (vis et écrous) l'activateur en spray - Ref. 7649 - LOCTITE.
3 - Appliquer au niveau du 3ème filet de la vis, un cordon d'un tour complet de frein filet normal - Ref. 242 - LOCTITE.
4 - Serrer au couple demandé.
Couple de serrage sur visserie M6 Inox / alu: 8Nm.
Couple de serrage sur visserie M8 Inox / Inox: 25Nm.
Couple de serrage sur visserie M8 Inox / Alu: 9Nm.
Couple de serrage sur visserie M8 Inox / Inox: 19Nm.
Couple de serrage sur visserie M16 Inox / Inox: 300Nm.
5 - Marquage de tous les éléments d'assemblages réalisé par un trait de peinture rouge (Témoin de desserrage).

BREVET N° 98.10109/2 782 60
Propriété de M. J.F TARDY





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Couple de serrage sur visserie M8 Inox / Alu: 9Nm.
Couple de serrage sur visserie M8 Inox / inox: 19Nm.
Couple de serrage sur visserie M10 Inox / inox: 30Nm.
5 - Marquage de tous les éléments d'assemblages vissés par un trait de peinture rouge (Témoin de desserrage).

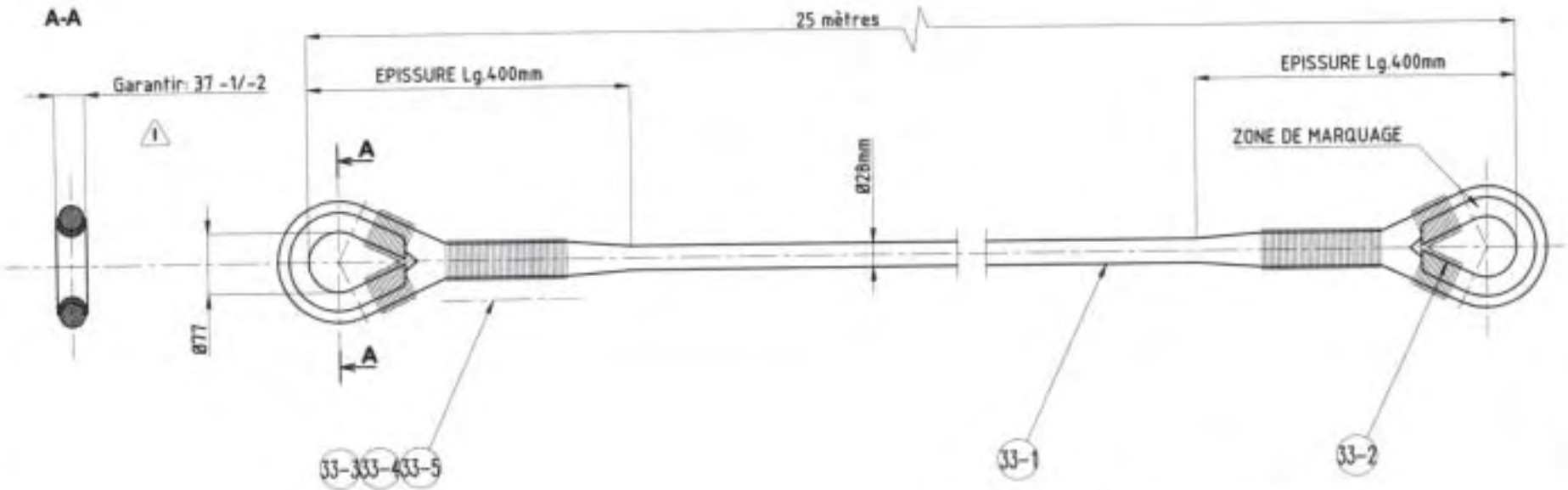
00	28/11/08	CREATION	D.ROIRON	DBO
Indice Rev.	Date Date	Modification Modification	Dessiné par Issued by:	Vérifier par Approved by:

Echelle Scale: 1/2 | Format Size: A3 | Tol. générales General tol.: ISO 2768 mK | Masse Weight:

INTERNATIONAL WIRE
TRESSE METALLIQUE J.FORISSIER

ESCAPE
ENSEMBLE
PIECES DE RECHANGE

ESC-V3-5B-PR | Ind. Rev. 00 | Folio Sheet 1/1



ATTENTION:
- **Aucune trace de coulure ou arête vive n'est acceptée.**
- **Brossage de la face interne et externe de la cosse coeur (lisse au touché) Ra 3.2 maxi**

CARACTERISTIQUE:
- Charge utile CMU supérieure à 2500kg
- Charge maxi à la rupture: A définir.
- Longueur maximale de l'épissure: 400mm.
- Epissures bloquées en fabrication.
- Garantie de tenue de l'épissure: 15 Tonnes.
- Poids dans l'air: 486 g/m

CONSTRUCTION:
- Cordage double
- Anti-giratoire
- Ame: polyamide noir
- Gaine extérieure: para-aramide noir

MARQUAGE INDELEBILE:
- **Date de fabrication:**
- **Matière:**
- **Numéro de traçabilité:**

Ind.	Date	Modification	Dessiné par	Vérifié par
G	12/07/04	SUPPRIME MARQUAGE PAR ETIQUETTE	DRO	DB
F	24/06/04	DESIGNATION ESC-V3-033-V1 DEVIENT ESC-V3-033-AR	DRO	DB
E	31/03/04	CODE MARQUAGE	DRO	DB
D	15/01/04	CHARGE LE REPERAGE + SPECIFICATION CORDAGE	DRO	DB
J	04/01/07	AJOUTE EPISSURE REMONTANT SUR COSSE COEUR	DRO	DB
I	05/01/05	AJOUTER COTE LARGEUR 37 DE LA COSSE COEUR	D.ROIRON	DB
H	22/09/04	SPECIFICATION DU FOURNISSEUR SUR LE CODE PRODUIT	DRO	DB
00	19/09/03	CREATION	DRO	DB

Rep.	Qté.	Désignation	Code produit	Matière	Observation	Spécification
33-2	2	COSSE COEUR POUR CABLE ACIER Ø28	COUVERTURE - 100x77x7	ACIER GALVANISE	-	-
33-AB	1	CORDAGE VOIR NOTE	-	-	-	

Spécification: -
Plan de surveillance / Quality plan: ESC-V3-SE6
Echelle / Scale: 1/1
Format / Size: A3
Tol. générales / General tol.: ISO 2768 mK
Masse / Weight: kg

INTERNATIONAL ROPE
TRESSE METALLIQUE J.FORISSIER

Projet / Project: ESCAPE
Désignation / Designation: CORDE VERSION ANTI-FEU
Code produit / Part number: 0N033770
N° de plan / Drawing number: ESC-V3-033-AR
Ind. Rev.: J
Folio / Sheet: 1/1

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